GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

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STRAY STRAWS FROM DR. C. C. MILLER.

ABOUT HALF of the wild bees have drones with stings, and some of the wild bees are only $\frac{1}{33}$ of an inch in length. So Prof. Bruner told us at Lincoln.

I INDORSE every word A. I. Root says about the way we outsiders were treated at Lincoln. It was no second-class fare we had, but just the best of every thing.

A. I. ROOT never visited a single cabbage or turnip patch while at Lincoln, unless he did it before the rest of us were up in the morning. [That is true, and it is something remarkable. —ED.]

I WONDER if some of the old hankering for strong drink doesn't yet remain with A. I. Root. At any rate he inquired of me if there was any saloon connected with the Lindell Hotel, where we stopped. And neither of us could find any.

IF PARAFFINE is left untouched by bees, why not apply a coating of it to ends of top-bars and other points we don't want glued? [I'm not sure but that paraffine at the edges of brood-frames that come in contact with each other might be a great help.—ED.]

STRAY STRAWS in last GLEANINGS are not as good as usual. They never are when the editor is at Lincoln. If he thinks it's fair for me to write Straws without footnotes, some of these days I'll let him write a full set of footnotes without Straws, and see how he'll like that.

NEBRASKA BEE-KEEPERS are to be congratulated on having two such aids as Prof. Bruner, the entomologist, and Prof. Bessey, the botanist. Besides being able they're good. I just fell in love with both of them. [I would go a little further, and say the bee-keepers of the United States are fortunate in having such aids as Profs. Bruner and Bessey.—ED.]

SWEET CLOVER. Mrs. L. E. R. Lambrigger says in Nebraska *Farmer*, "For honey purposes we should prefer one acre of the yellow to four of the white, while for hay and pasture one acre of the yellow is preferred to a dozen of the white." Now, who can tell us more about this? I always supposed the yellow was inferior, and have never seen but a few stalks of it.

THE *British Bee Journal* says honey will remain liquid longer at 65° to 75° than at a higher temperature. I wonder if that's correct; and if so, why? [We in this country have come to the conclusion that a temperature of from 70 to 80 degrees Fahr. is more favorable to keeping honey liquid than a lower temperature. Possibly English honey is a little different from that produced in this country.—ED.]

LET ME TELL F. Greiner (see page 740) that I learned bees would forage at 5 days old much in the same way he did—that is, by actually seeing them at it. I did it for the entirely safe introduction of a costly queen, putting in the hive no bee out of the cell but the queen. And when I saw bees only 5 days old carrying in pollen, it would be hard for Herr Vogel to reason me into the belief that it was impossible till 13 days later.

BROTHER A. I., please don't run that microbe theory into the ground. At least, don't insist that all stomachs must be governed by Medina rules. I can go out this minute and find an apple on the ground under a snow-tree, mellow and delicious beyond any thing I can find on the tree, and I can eat double as many of those on the ground without hurting me. Much depends on the kind. I shouldn't like to eat a Baldwin or a Spitzenberger right off the tree.

THE HUSH-UP POLICY seems to be going out of date. Years ago there would have been a vague hint that "certain parties in one of our large cities might well be investigated before being entrusted with large consignments." Now Geo. T. Wheadon & Co., and other names, are given in very plain English, with not only the city but the street and number. That's right. When a man goes crooked, whether in or out of our own ranks, and it's known that he is deliberately bad, and intends to remain so, the general good demands that his name be given.

Doolittle says in *American Bee Journal*, that in mailing a queen for a three-days' trip of 600 or 800 miles, or for any shorter trip, he allows an escort of 8 workers in July and August, and 11 workers in June or September. For a longer trip a larger cage with 12 bees in July or August, and 14 to 20 in June or September. For colder months 30 to 40 bees. That tallies pretty well with the escort of 35 from Italy, mentioned on page 758.

Possibly Mr. Danzenbaker is right, p. 756, that "the bees have to stop to gather and chink in propolis" before commencing to store honey in the supers; but I'm strongly of the opinion that my bees do nothing of the kind. Early in the season they do very little propolizing, chink or no chink; and later in the season they plaster bee-glue everywhere, even after every thing is sealed air-tight. [I was of the opinion myself that Mr. Danzenbaker was not entirely correct; for you notice I based the statement entirely on his authority.—Ed.]

That fatal stinging case on p. 754—isn't there some misprint or some mistake about it? Did the bees volunteer an attack upon a horse picketed a quarter of a mile away from their hive? [I believe there is no mistake, doctor. In some cases, when bees are allowed to get fearfully enraged they will go a long distance to sting something or somebody. I remember once when the bees got to robbing very badly in our own yard (sorry to confess it), and I afterward heard that some people in our portion of the town and a quarter of a mile from the apiary had been stung.—Ed.]

"Feeding by pouring syrup on the bottom-board . . . with fast bottoms . . . may do very well," says the editor, p. 743. I think not. I practiced just that thing on a large scale, and liked it till I found too many dead bees as a consequence. But you must watch closely or you'll never notice it. [I can readily believe, doctor, you are right. In feeders where a large surface of syrup is exposed, as it would be in case of the bottom-board or bottom of the hive, we are pretty sure to have some bees drowned. They get into the syrup and swim around a distance, and give up and die. It is far safer, I believe, to use regular feeders. The Boardman or the Miller is much preferred by us.—Ed.]

Referring, Mr. Editor, to your last remark, p. 748, I think the splints do more than to prevent sagging, and I'm not so sure that a filled comb will stay in the frame any more solidly with wire than with splints. As to hauling to out-apiaries, I wouldn't think of using full sheets of foundation without having them more or less fastened at all four sides with melted wax, whether wire or splints were used, so they could be safely hauled in either case. [But the splints, doctor, do not of themselves hold the foundation *independent* of any fastening to the inside edges of the frames. The wires, inasmuch as they are strung to the frame itself, and imbedded in the wax, hold the foundation in place. When we use full sheets we never think of using any melted wax or of making any other attachment than the wires afford except to the top-bars; and if we were using perpendicular wiring we would not use even that.—Ed.]

Dr. E. Gallup says in *American Bee Journal* that he introduces queens with tobacco smoke morning or evening when all the bees are at home. If done through the day, some bee that was out and escaped the smoke will kill the queen. [We introduce queens right along in our apiary, without tobacco smoke. We simply use the Miller introducing-cage; and if we make sure the colony is queenless we seldom if ever have any failure. The use of tobacco smoke for the purpose of uniting or introducing should be condemned, especially in the hands of beginners. A colony that has been drugged is ten times more liable to be robbed, and I can not help feeling that tobacco does in a measure do injury. The only time we ever use it is during the days of our county fair, when we desire to keep the bees at home away from the candy stands; and after having drugged the bees with tobacco for this purpose during the holding of three or four different fairs I am coming to believe that we were doing no little damage. The weed is a poison at best.—Ed.]

Suppose a colony is unqueened, how long before a successor begins to lay? Answers in the *American Bee Journal* make the time vary from 16 to 40 days, most of the answers centering somewhere about three weeks. The discrepancies in the replies make it seem doubtful whether some of the repliers have ever made careful observations on the point. [Even considering the circumstances and conditions under which a colony may be queenless, and whether or not the apiarist or the owner of the bees assists them, the range of answers as given in the *American Bee Journal* is a little wide. If the apiarist gives a queenless colony a cell ready to hatch within a day, there may be a laying queen, if all goes well, in about ten days or less. In my early experiments in queen-rearing, carefully comparing a number of colonies, I found that young queens were fertilized in from four to seven days from date of hatching. These intervals of time were taken by giving newly hatched queens to colonies, and then watching closely to see when they came in with a drone appendage. In from two to three days after the queen thus came in she would be laying. This would make it, when a newly hatched virgin queen is supplied, 6 or 10 days from the time of dequeening to the time the new queen mother was doing service. But I

presume the question is based on the assumption that the colony really depends upon its own efforts. Well, then, the bees might select a larva four days old, and build a cell around it. This would leave about twelve days for the young queen to hatch; say six days more to be fertilized, and two days more for her to be laying, or, in all, about 20 days before there would be a laying queen. If the bees reared a cell from an egg, the young queen would hatch in about 16 days. Adding 8 days more for egg-laying, there will be 24 days. The answer as to the time a colony may be actually out of a laying queen, from date of dequeening to the laying of a new one reared by the bees alone, I should say would be from about 20 to 30 days.—ED.]

THE BEE-KEEPERS' EXCHANGE.

SOME OF THE OBSTACLES THAT HAVE BEEN MET IN A LOCAL EXCHANGE.

By C. A. Hatch.

While some are urging the organization of a national bee-keepers' exchange to control the honey market, lessen cost of supplies, etc., it may be well to inquire into the workings of one in actual existence, covering but a small part of our national territory. The Bee-keepers' Association of Maricopa Co., Ariz., is such a one. It has been in successful operation for a number of years, and at one time had quite a large membership; but at present the number is reduced by about a half, who have withdrawn and started another society. It is a stock company, and the original shares sold for $2.50, but now they cost $5.00. The owning of a share makes the owner a member, and entitles him or her to one vote in the business of the society.

The officers are the usual ones for any association—president, secretary, etc. The secretary is the business manager, assisted by a board of directors, of which the president is an ex-officio member. The secretary only gets pay for his services. His salary is fixed at $100 per year, and necessary expenses — telegrams, stationery, postage, etc. He attends to the buying of supplies, and selling and shipping of honey. He can not buy nor sell except by consent of the directors. In selling, each member is independent; i. e., he is not by his membership bound to sell through the society, but can ship and sell his own crop if he so chooses, which is one of the weaknesses of the organization; for, while one half of the members might agree to sell at a certain price, the other half might object and thus defeat the wishes of the other, not so much by voting against the measure as by putting their honey in the same market to compete with the associated product. Or the dissenting ones may sell to the same parties, and sometimes defeat the early shipment of the society's honey. This was done in the Maricopa association this very year, the buyer of the association honey being compelled, to avoid competition, to buy a dissenting bee-keeper's honey, to the detriment of the associated honey, as that was held back from market until the other was out of the way. The way to avoid these troubles would be to bind each member to sell through the association when a majority so votes.

The secretary also decides how many cans of a carload belong to each person, and the bee-keeper is supposed to be under obligation to take that number or get some one else to take them if he does not use them. His duties also require him to inspect honey offered for shipment, and to see to the weighing and loading of the same when delivered at the home depot.

The expenses of the Exchange are met by a tax of 4 cts. per case of cans, whether coming into the association as empty cans or going out as filled with honey. If a member gets his cans through the society, and then sells the same way when filled with honey, he has to pay 8 cts. per case. This would seem to be as equitable a plan for raising funds as could be devised; but it is open to serious objections, giving the small bee-man an undue advantage over the large producer. The member with only 10 colonies has as much voice in disposing of the fund so raised as the one who has 600 colonies. This in a measure might be overcome by giving members votes according to the number of colonies on hand in the spring, or according to the number of cases of honey shipped the year before.

The unit rule of voting also makes trouble in another way. Suppose a meeting is called to determine as to sending for a carload of honey-cans. Mr. A may have 500 colonies of bees, and all the cans he wants; but Mr. B, with 25 colonies, votes to send for a car, as he is out of cans. His part of the carload might be 12 cases, costing $10.00, while Mr. A's share at the same rate would be about 250 cases, costing over $200.00, which he is compelled to pay for, getting something he does not need and is compelled to carry over to the next year, only, perhaps, to be met by the same difficulty.

The Maricopa association confines its work to buying cans and selling the product of its members, although there are members who do not sell through it. The hives and frames are so various among the bee-keepers that no effort is being made to supply them.

I hope those who are about to organize bee-keepers' exchanges may find some helpful suggestions in this article, and profit by a Wisconsin man's experience with an Arizona honey and bee-keepers' association.

Pasadena, Cal.

THE GABUS CLOSED-END-FRAME HIVE, AGAIN.

THE COMPARATIVE ADVANTAGES OF CLOSED-END STANDING AND LOOSE HANGING FRAMES.

By E. H. Gabus.

In GLEANINGS for Oct. 1, 1896, p. 709, Dr. C. C. Miller, in answer to H. P. Joslin's queries concerning my hive, says, in speaking of the $\frac{5}{16}$ holes in the end-bars, that it would be impossible to insert or withdraw the bolts. When I wrote the article that appeared March 1, 1896, I had been using frames with $\frac{3}{8}$ holes; and as the bolts had more room than I thought was necessary I was thinking that $\frac{5}{16}$ holes would be big enough. I found, however, that in practice $\frac{5}{16}$ holes are just a trifle small, and that it is better to have the holes a little too large than too small, and have continued to make them $\frac{3}{8}$. I can assure Dr. Miller that, with $\frac{3}{8}$ holes, there is no trouble whatever in inserting or withdrawing the rods.

Now in regard to standing frames not handling as well as hanging frames, I wish to say that the trouble does not exist in the frames themselves, but is located in the person's mind. Very often all of us, and on many subjects, make up our minds that a certain thing or a certain way of doing a thing to accomplish a desired result is too much trouble, or that it is no good anyhow. We are really not willing to give it a fair trial: and when that is the case, it is very certain that our report will be unfavorable, for the very reason that we were not the proper person to give the thing a fair and impartial trial. I can handle the standing frame as easily and as quickly as the hanging frame, and I can handle the standing frame with more satisfaction than the hanging frame; for in handling it I can see just what I am doing, and that is not the case with the hanging frame; and, furthermore, I do not think it is necessary to handle the frames as much as some do.

In regard to reversing hives to obtain better results, I want to say that it is advocated by a great many bee-keepers. It is possible that, by reversing, we can have the honey carried from the brood-nest to the super, and have more brood in the brood-nest, which, if it works well in practice, would be an advantage. I can not speak from experience, as I have never practiced such a system. In regard to getting the bolts through, as Dr. Miller says, "It might require more time and care than desirable." Certainly Dr. M. never handled standing frames. The frames are pushed against each other so no bees can boil out, as he says, at the open joints, before the bolts are put through. I send you herewith a case or part of a hive as I now make it. The frames are half depth, and two cases will make a hive for an ordinary swarm or colony. The size of the hive can be increased and diminished at pleasure in either a horizontal or a vertical plane. By using a bottom similar to the dovetailed bottom, reversing can be practiced. If the frames are put together and the top-bar left off, they make the section-holders, section-slats being put on the bottom bars to protect the sections from the bees. In that way I can dispense with any special section-holder. There is a bee-space at the bottom, and they tier up square and true.

Brock, Neb.

[There are some closed-end frames that are handled as easily as any loose frames. The Quinby as used by Elwood and Hetherington works very freely without killing bees or sticking from propolis accumulations. I see no reason why your frames should not be handled easily, though I somewhat question whether bolts and rods passing *through* the end-bars is as economical an arrangement as it might be. —ED.]

PEDDLING HONEY.

KILLING TWO BIRDS WITH ONE STONE; FOLLY OF SELLING POOR GRADES OF HONEY AROUND HOME.

By F. A. Snell.

The bee-keeper can, when not busy with other work, take a load of principally extracted honey and sell it, when perhaps he would not be otherwise employed, and thus earn something more toward the keeping of the family. Any leisure time, be it half a day at a time only, and during autumn, sell quite a nice lot of honey; or if, having business with some one several miles from home, several cans may be thus sold. On such a trip I called at the different families. To the family first called on, I sold one 10-lb. can; at the second place I took in a can, asked them to give me a sauce-dish so that I might let them sample the honey I had. The honey was tried, and seemed to please. The lady remarked that she had intended to get some at the store, but forgot it when in town, so they had been going without. They bought a 10-lb. can, and, after a few minutes' chat, I took my leave. At the next place the family were from home. I called at the next house, and, after sampling the honey, the people bought two cans, or 20 pounds. I was informed that they were short of change, but would leave the pay for the honey with our postmaster in a short time, which was satisfactory to me, as I well knew these people to be reliable. I next called at the place of my destination and before leaving, sold a 10-lb. can and received my pay.

Thus five cans, or fifty pounds, were sold, bringing me five dollars. The cans were returned, as I arranged to have them back when the sales are made near home. If the buyers neglect to return the cans I call for them when passing that way. So it will be seen that the net price of the honey is 10 cents per lb. when thus sold, the buyer retaining the cans until

emptied. The extra time consumed in selling the fifty pounds on this trip did not exceed one hour, and my horse did not object to the short rests on the way in the least.

Many times I have taken along a few cans when going on similar trips, and sold from two to four or five cans on the way, at times going one road and returning by another, making stops both ways.

In peddling honey one must not be easily discouraged. for sometimes a number of calls may be made and no sales effected; and then, again, it is quite the reverse, and honey will be sold at nearly every point at which a stop is made. One must start out with full faith in his honey as being of fine quality, and cheerful in spirit, and a determination to sell to every family possible, even if only two or three pounds, leaving a leaflet at each place, and his honey-label on each can, with name and address, which should mention the candying of honey in cool weather, and how to liquefy. I can not agree with some bee-keepers who advise the selling of the poorer grades of extracted honey at home or in the home market. I believe a poor grade of this honey should never be sold at home, but sent off to be used in the packing of meats, or in factories where cheaper sweets are used. If this grade of honey be sent to a commission house, the apiarist should advise the firm of the shipment, grade of the honey, and the company to whom the honey is shipped w l know at once where to place it in selling. The selling of inferior extracted honey, or of a low grade, has, when sold for family use, done a great deal to injure the sale of honey, and is, I think, very unwise on the part of the apiarist who wishes to build up a good trade in honey, or hold one already obtained. One season the quality of our honey was very much injured by a mixture of so-called honey-dew. I offered no extracted honey for sale at home that season; and when asked by old customers if I had honey to sell I informed them that I had no honey that I had extracted which was fit to eat, as it was mixed with so-called honey-dew, and dark and rank in flavor. Of our comb honey that season, the better sections were picked out and sold; the dark (almost black) ones were given the bees the next spring. The extracted was sent to a commission firm, and so or the purposes above suggested, at the low figure of 5 cts. per lb.

Milledgeville, Ill.

DRAWN COMBS FOR SECTIONS.

FEEDING TO PRODUCE WAX; HOW TO SECURE DRAWN COMBS FOR SECTIONS BY FEEDING, IN ADVANCE OF THE HARVEST.

By Samuel Simmins.

Mr. Root:—At the present moment it may perhaps be brought the more forcibly to your mind that the reason why you and others condemned, or failed to appreciate, my non-swarming system, as applied to the production of comb honey, was because you did not grasp the real facts of the case. You probably considered, as did other honey-producers, that bees would not work in sections while so much empty space existed under the brood-combs. Yes, and how difficult it has been to get bee-keepers generally to know that their industrious workers *would do it every time*, without any necessity of following the old idea of crowding the brood-chamber "tight" for the purpose of securing the best-filled sections.

For more than ten years I have been pegging away at this matter; and, by the pamphlet sent you with this, you will see that the basis of my *system* as applied to comb-honey production was *drawn combs*.

Perhaps you will now realize my position, and will see how easily one may be misunderstood, or the main feature of a plan of management overlooked, when such practical men as yourselves did not read me aright, as shown by your complete oversight in respect to my existing plan, and, you will admit, fully established claim to priority as regards the adoption and systematic preparation of new or drawn combs ready for the comb-honey harvest. I believe a copy of the said pamphlet was sent you when published in 1886, while friend Newman, of the *American Bee Journal*, disposed of a considerable number of copies at the time.

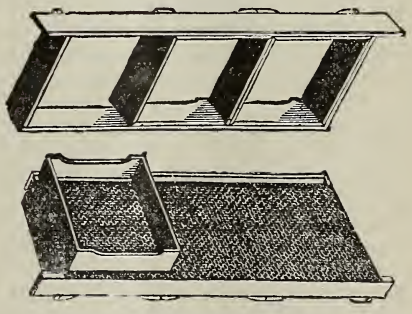


Fig. 23.
Simmins' Divided Section Holder, shewing arrangement of foundation and halved sections.

In the opening chapter of that work, after describing how the vacant space should be provided under the brood-nest, you will notice I proceed: "For all practical purposes the bees can be at once crowded into the sections, the latter being first *filled with newly built combs*." . . . . . "The supers (sections) being all fitted with combs, ... the bees will fill those rather than go on comb-building to any extent below, or in front of the brood-nest." . . . . . "When one has made up his mind to start with nothing but comb, he

will find it can be done; and, moreover, an immensely increased yield will be secured thereby."

There are many other pointed references to the same prominent and integral feature in my system, which I need not bring in here; but for the latest developments in this line you will find important information in "Modern Bee-farm" (1893 edition), pages 95,* 114 to 118, 136, 138, 205.

You will notice (p. 118) no attempt is to be made to build out full-depth cells; but that, as soon as they are well on the way, the combs are for all practical purposes ready for business; and that state of progress is attained in the course of a few hours only, when favorable conditions are ensured by the apiarist.

On page 117 of the above work you will find, "Bee-keepers generally have saved over unfinished combs in sections from year to year, and these were found to give a good start to the bees; but nothing was done to institute the systematic production of such new white combs for all sections before being placed on the hive, until the present system (Simmins' non-swarming plan) was inaugurated."

However, "combs left over" are not to be compared with the new combs, which are so readily obtained and more rapidly worked. This point will be freely admitted when it is remembered the fresh-drawn article has the strong scent of the living hive still clinging to it.

DEEP-CELL SUPER FOUNDATION.

My experience has taught me that, for comb honey, no cells whatever are required in the purchased foundation, but simply the thinnest possible mid-ribs impressed as usual, and in that case the natural base of course, being used. I do not see how a high side-wall (thin enough) is to be gained. Even if ultimately secured, it will not be found so favorable as other foundation which has already and *quite recently* been worked upon by other bees. What, then, are to be the advantages of high walls? Such will be too bulky in shipping, more liable to damage, while cost and freight will be prohibitive as compared with the lighter article. Moreover, I do not think the bee-keeper will care to pay for the surplus wax, especially as deep cells encourage pollen deposits where the most careful management is not carried out.

PREPARING FOUNDATION; DRAWN COMBS SELF-FIXED INTO SECTIONS.

If you will cut three sections into full-length halves, and also divide a section frame or holder, then arrange the whole set so that they go together again as one, and next place a sheet of foundation measuring some 4 in. deep by 13 in. long (4x13) between the halves, you have a correct representation of Fig. 23 on p. 95 of my "Modern Bee-farm." Can you imagine any thing neater, or a more expeditious and secure way of furnishing the sections? The halves can be put together by simple hand pressure, and inserted in the twin frames or holders, as the latter lie flat on a table before the operator, more rapidly than the entire section can possibly be folded by any known process.

Having followed me so far you will now understand my method of securing drawn combs ready for the crop of section honey. The whole sheet of foundation is attached (by pressure at intervals along the top-bar), to that half-frame, to which, on its other side, is secured the separator, with three half-sections between (separator and foundation).

These half-sets are then spaced about ⅞ in. apart in a super case, and drawn out by specially prepared stocks, being exchanged for others as rapidly as the work can be made to progress. The companion halves (of each set of sections and holder) are then pressed on to the other side of the newly worked combs, and arranged in cases for completion as soon as the good times come.

The halves of the holders are more easily removed from the sections than are the whole sections from an entire (old-style) frame when the combs are completed; while the foundation connecting the sections may then be divided by fine wire, or the three handled as one.

An alternative plan is that where my twin crates are used. In this style no separators are required, and the foundation may be first "drawn" as before in half-frames. The three half-sections and adhering new comb were then removed from the frames and placed in the twin crates, together with the blank half-sections in due order. The same crates, holding only nine sections each, may also be used in lieu of section-frames. They can be placed for the purpose of drawing comb immediately above the center of the brood-nest, when, with a suitable colony to work with, many combs can be prepared; and there is less trouble in shifting, as the contents of the crate are arranged as they are to remain; consequently my sections cut on only three sides are adapted to this class of crate—a full-width sheet of foundation being dropped into the three sections at one operation, where it is immediately self-fixed.

Heathfield, Sussex, Eng., Sept. 17.

[The foregoing article I referred to Mr. Weed, the inventor of the New Process foundation, and an expert in the wax business. After reading the article and Mr. Simmins' books, Mr. Weed expressed his doubts that wax could be produced at a profit by feeding, and gave his reasons why. I told him I wished he would put his thoughts on the matter to paper, and the following is the result:]

For the benefit of those not familiar with Mr. Simmins' book it will be well to say that his whole "system" is based on the theory that

*For convenience of our readers I have reproduced the engraving appearing on page 779.—Ed.

the production of wax is a profitable branch of bee culture, and that he predicts that, before long, it will be usual to feed back honey for the sake of producing wax.

It seems to me that comment on such a theory is superfluous; but Mr. Simmins' method of arriving at his conclusions may be of interest. He found, by feeding back, that 12⅔ lbs. of honey would produce 1 lb. of wax; but from this he deducts one-half as being the amount of honey consumed by the bees while building the comb. He thus figured that, according to the "Simmins system," one pound of wax can be produced from 6⅔ lbs. of honey. Why the cost of the wax should not include the feed of the bees and their time while making the comb is more than I can see.

I think it will be generally admitted that drawn combs are very valuable to the bees; but I scarcely see how Mr. Simmins can claim to be the discoverer of their usefulness. If it be a fact, however, that we can obtain a plentiful supply of drawn combs before the honey-harvest, by Mr. Simmins' method, he is certainly entitled to a great deal of credit.

But, let's see how he proposes to do it. After splitting the sections as shown in cut, he fills them full of foundation, making no allowance for sagging. He claims that this foundation will be built out to ¼ in. deep in a very few days, if we feed them carefully and keep them warm enough which he proposes to do by "any kind of hot-water vessel placed above, especially at night, where it can be regularly attended to." Drawn combs are pretty valuable; but I don't believe that many people want them badly enough to patrol the apiary day and night, with a tea-kettle full of hot water. The kind of foundation that he considers "perfect" for surplus honey is only a septum, without any side-walls whatever; for he finds his bees generally gnaw off all the side-walls before they begin to build. He must have had very strange bees to obtain such a result. Commenting on a recent editorial in GLEANINGS, Mr. Simmins says he doesn't see how deep-cell foundation can be made, and that the cost will be prohibitive. If he doesn't know how it can be made, how does he know what it will cost to make it?

It was not proposed to use any more wax, but to take it out of the base of the foundation, where Mr. Simmins prefers to have it, and put it into the walls where the bees can best utilize it.

Later.—Since the above was in type a letter has come to hand from G. M. Doolittle, who, speaking of putting on sections before the honey flow, says, "If we put our sections on early, and they are on when there is no honey to be had, the bees seem to be bound to cut out the ordinary light foundation and make a 'mess' so that when a yield comes the foundation is out of place or gone entirely, which is a nuisance." It would seem from this that Mr. Doolittle's experience with foundation before the flow is not the same as Mr. Simmins'.

[Whether Mr. Simmins is right or not in hi idea on the economy of producing comb mad by bees before the actual harvest, by feeding I should be inclined to give him credit for firs conceiving the great possibilities and advantage of drawn comb in the *production of com honey*. Now, if any one in this or any othe country is prior in this idea let him hold up hi hand.

I did receive the pamphlet bearing date of 1886; but I must confess that I did not at the time "catch on" to the value of drawn combs in supers. Indeed, I was and have been skeptical all along until Mr. Weed convinced me by actual tests in the apiary this summer that bees would fill with honey, and seal over sections of drawn comb, before they would even touch foundation in other sections next to them.—ED.]

BEE-KEEPING IN JAMAICA.

INDUCEMENTS AS WELL AS DRAWBACKS.

By H. G. Burnet.

Friend Root:—Bee-keeping in this ideal clime, one would think, should be in keeping with its surroundings; and if the location is properly selected, or the bee-keeper does a little migrating to catch the flow from different sources, he will ordinarily not find any thing to complain of. Box hives and black bees are the rule in the island—at least among the peasantry—with the old box super, with glass side, for the surplus arrangement. Some are beginning to use frame hives, and, of course, extractors naturally follow, and other modern appliances are apt to make their way, though slowly—at least among bee-keepers of the peasant class, who mingle more or less superstition with their knowledge. A colored neighbor who has an apiary of 100 colonies in boxes of varied dimensions sells his honey at retail at 12 cts. per pint—this for strained honey—for which the demand is greater than comb. Wholesale rates for export are much lower, being from 38 to 45 cts. per gallon in Kingston, which does not show a very great apparent profit; and as to how much profit there may be, I can not say until I have had more experience. I think the home market capable of expansion if proper care be shown in catering to it. A recent inquiry in Kingston showed the market entirely bare—none to be had at any price. No wonder there is no home market.

As to the drawbacks: In some places ants are very troublesome, and hives are set up on posts two feet high, and various methods used to prevent the ants from getting to them. In some parts of the island drouths sometimes cut seasons short, and even make feeding necessary if extracting has been too close: but if the bee-keeper sees to it that the lower story is not disturbed, the bees, if Italians, will go through

all right. The low export price mentioned is for the ordinary strained honey. I imagine that best grades of logwood, orange, or lignum-vitæ honey, put up in neat packages, say five-gallon cans, would sell at a good price in London. It is honey that is hard to beat anywhere. There is a wide field for bee-keeping here, as well as for the growing of certain tropical fruits, and coffee, nutmegs, allspice, kola nuts, etc., and certain vegetables for American markets, such as Irish potatoes, egg-plants, tomatoes, etc. The soil is rich, the climate healthful and pleasant, and, in the mountains, quite cool and bracing. The scenery is lovely, and, among the mountains, magnificent. The government is English; but the larger part of the population is black or colored; yet they are more peaceable, and easier to get on with, than a like population in the United States.

Ewarton, Jamaica, Oct. 8.

COMB-HONEY CRATES.

MAKING THEM THE RIGHT LENGTH FOR A WAGON-BOX.

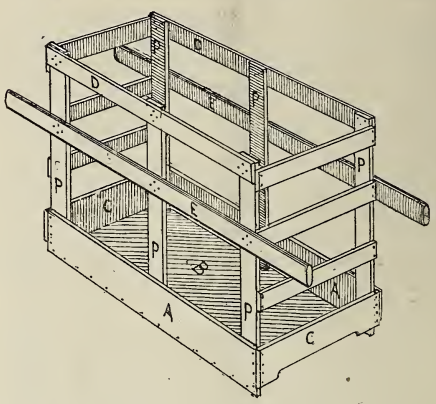
By F. Greiner.

Mr. Editor:—For shipping comb honey by regular freight you have for several years advised to crate together nine of the 24-lb. cases into one large crate, three cases side and side, and three high; and no doubt you have sent out a good many such racks or crates. Now, I can not believe that crates of such dimensions, as they would necessarily have to be, are the most convenient. I made up a few this season, and when done I found they would not load crosswise into an ordinary wagon-box; and to set them lengthwise, much space had to be wasted, and but few could be taken at one load. Being at our depot this fall one day I happened to witness the arrival of a few such crates coming from my friend C. F. Dodd, of Italy. They had been carried some eight miles on a wagon, and on account of their loading so unhandily one of them had been carried turned up on one side, so as to go into the wagon-box. As might be expected, the honey was leaking from this crate.

As we can not very well change the size of our wagons I would suggest, instead of constructing a crate for three cases side by side, to arrange it for but two, and then tier up four high, making eight to the crate — a package nearer cubic; also heavy enough for convenient handling, weighing about 250 pounds. Crates of this shape and size may be loaded with the projecting handles crosswise the wagon-box, and a fair load may thus be gotten on conveniently.

Of course, these crates are an additional expense to our business; but they may be returned to us by freight after the honey is taken out, and, if they are made well, they will last for years.

I inclose you a drawing of a crate I have been making of late. The drawing explains itself;



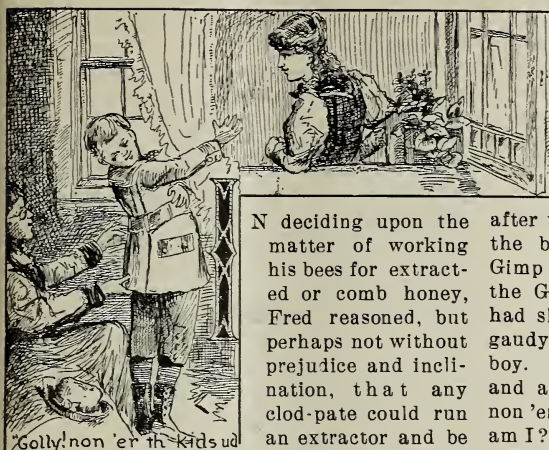
but I will give a few hints that may be of benefit to some one or other in case you should decide to publish this:

Although a crate may be made principally of edgings as they often come from the sawmill, I prefer to make them of regular one-inch lumber, preferably basswood. The strips the crate is made of need not be any wider than 2½ inches, except the boards around the bottom A and C, which should be about 6 and 4½ inches respectively, and the regular bottom B, which may be of thin lumber, and should be tolerably tight. It is to rest on 1½ or 2 inch strips nailed to the boards A A, at the bottom. In constructing the crate I allow 2 inches space for hay or straw. The handles E E should project about six inches—no more—and should be rounded the whole length, as should be the strips at the top, D D. The sharp corners *inside* the crate would be found disagreeable to the hands and knuckles when setting the honey-cases into the crate, and when taking them out. The posts, P, P, etc., should be a full inch thick to give sufficient room for the fingers when filling the crate. The lower edge of the 4½-inch-wide boards C C may be rounded also, so as to be easy on the shins of the freight hands or other carriers.

There, now, if your artist will reproduce my drawing exactly as it is, it will be easy enough for any one with the above description to make the crate.

Naples, N. Y.

[Your point is a good one: and if we can change our crates and yet not run into some other difficulty worse than the one under consideration, we will make the change. The only objection to your crate is that it would be a little top-heavy—liable to be toppled over in freight cars when they are bunted by other cars. Our present crate takes in an even 50 shipping cases *in the flat*. The new one should be made to do as much. We will test the matter.—Ed.]



BEE KEEPER FRED ANDERSON, OR THE MYSTERY OF CRYSTAL MOUNTAIN.

By John H. Martin.

IN deciding upon the matter of working his bees for extracted or comb honey, Fred reasoned, but perhaps not without prejudice and inclination, that any clod-pate could run an extractor and be satisfied with half-way work and half-way success, while comb honey production called for a higher order of skill. He also held the opinion that, if a person commenced to work his bees for extracted honey, however successful or skillful he might be, he should be so progressive as to aspire, student-like, to graduate from the various departments of honey production, and should regard every nice section of comb honey as a diploma to that degree. Fred further reasoned that, if the honey produced on the river-bottom was amber or light amber, it would show all of those grades to full advantage in the liquid state; but if put into comb the white cappings would raise the honey at least one grade, and could be sold to better advantage. In the promotion of these plans Fred had sent to San Francisco for several thousand sections; and while he was away employed in good works the little steamer Valetta, which never tied up over a Sunday, left his bundles of supplies on the Ghering wharf.

It was in this work of putting together sections that he wished to employ the services of Gimp Dawson; and early Tuesday morning he sculled his boat down the river for him.

In years past the Buells had been through the deep waters of affliction in the loss of a bright and promising boy of nine years. His clothing had been laid away with care, and twice a year or oftener it would be removed from its receptacle, and aired. On such occasions, as memory went back to the whistling, rollicking boy, Mrs. Buell would as often sit down, and, bowing her head upon her hands, give way to sobs and tears.

In view of the condition of the Dawson boys, Mr. Buell had mildly suggested that they could make no better use of the garments than to clothe the naked with them. After a few moments of sober reflection, Mrs. Buell said it was just as well, perhaps. Therefore, soon after the Buells landed, Gimp was taken into the bath-room; but half an hour later the Gimp that came out with Mr. Buell was not the Gimp who went in. Like a chrysalis he had shed his ragged shell, and emerged, not a gaudy butterfly, but a clean, wholesome-looking boy. He evidently appreciated the change; and as he surveyed himself he said, "Golly! non 'er the kids'd know me frum an eel—slick, am I?"

The supper-table, with clean white spread and dainty dishes, was another revelation; and, forgetting his mother's injunction, he let his tongue loose, and said, "Are this heaven, Mr. Buell?"

It was in this transformed and wondering condition that Fred found him. "Why, Gimp," said he, "you look every inch a man. The next thing for you to do is to earn some money. I want you to help me a few days at the Ghering ranch, and will pay you well for your work."

"Kin I ever come back here agin?" asked Gimp, with some apprehension.

"Yes, yes," said Mr. Buell, with emphasis. "Mr. Anderson wants your services for only a few days; then you can return, and next Sunday you shall go home to see your people."

"It seems to me," said Fred, "that he never ought to go back again; for if there is any improvement in him here, it will be lost in the influences of his home."

"You are wrong there, Fred, for we must make the influence work the other way, and elevate the whole family. You know the Scripture injunction, 'A little leaven leaveneth the whole lump.' This is the leaven, and it is in our hands to apply it properly."

"I fear it will be a desperately hard job," said Fred. "I shall study this specimen for the next few days; and if we can make any impression here, there may be hopes for the rest."

Fred's colonies of bees had strengthened up rapidly after the transfer, and were now crowding him for supers. In preparing them he found Gimp a very handy and tractable boy. When shown the sections he said, "I reckon I knows how tu put them tergether. We kids had a hull lot of them fur playthings arter McBurger was drowndid. Yer see, dad ust ter come around sometimes about sundown and say, "Wall, boys, I'm gettin' pow'ful honey hungry. We'll go over an' rob a skep of bees.' Bob an' I had to do the work an' get the stings. Ef we cried 'r made a fuss 'r tried to git away,

dad stood thar with a whip ready to kelarrup us. When we got through an' had the honey in the wash-tub he'd tell us tu take the chips, as he called these sections, fur playthings. He was a curis man, dad was."

"I should say he was," said Fred, as through the boy he got another view of the man's depravity.

Matt Hogan would come over as the work on the ranch would allow, and the three made short work of the sections and supers, and the hives were soon supplied.

Fred now turned his attention to the erection of the cabin; and with Gimp's aid he had that in such a stage of progress that on Friday night he returned Gimp to Mr. Buell's, rewarding him liberally with several pieces of silver, which, being the first he had ever earned, gave him such a sense of ownership and of his importance as he had never before experienced.

Fred and nearly all of the men on the Ghering ranch were quite punctual in their attendance at the Sunday-school. The general attendance became larger as the Sundays passed, and Matt Hogan became so much interested that he had gotten together a jolly class of Irish boys, and over in one corner he was teaching them rules of sobriety and good order, "according to St. Patherick," as he expressed it.

When Mr. Buell persisted in putting into practice his preaching, and brought back an improved Gimp with his earnings in his pocket, Mrs. Dawson had faith that her day of prosperity had arrived. Covering his charity with a little diplomacy, Mr. Buell purchased fish of the boys, or wild berries and mistletoes of the girls, and soon had them all well clothed. The better influences thus set in motion had their effect, and the family began to rise to a higher worldly and spiritual level.

Fred's bees made remarkable progress considering the lateness of the transfer, and his sections were gradually filled. The season was prolonged by moisture in the river-bottoms, and by August his forty colonies had increased to fifty, and yielded on an average 100 pounds per colony. The pile of beautiful comb honey in the one-pound sections, all crated and nicely graded into three lots, filled the half of his cabin, and created quite a sensation on the Ghering ranch, and all of the men were getting the bee-fever.

"That vas a case of somedings from nodings," said Mr. Ghering, as he looked wonderingly at the pile of filled crates. "Let me see. You get 10 cents a pound, may be more; 5000 pounds, that make you $500. You vork only two dree months, somedimes go to meetin', go fishin', go to see Miss Buell. That vas so. You vas von rich man. One tausend colonies make $10,000. Mine cracious! Fred, you vas von millionaire —von golt-pug—before you vas dirty years old. Mine cracious! I vill set out mine whole ranch to bee-hifes;" and Mr. Ghering walked to and fro with his hands in his pockets, grasping his imaginary fortune.

"It is very easy to figure out great profits in the production of honey, but quite another thing to realize them. The greater the number of colonies, the greater the expense; and it has been found that one man with a little help now and then, with a moderate number of colonies, say 500, will realize about as much clear profit in the long run as a person owning a thousand or more. But you can figure up great fortunes now for a few days while I run down to Sacramento with a few samples and try to market it."

Matt Hogan's colony, on another portion of the ranch, under Fred's supervision, had made remarkable progress, and had secured 150 pounds of honey. This was added to Fred's pile, and he said to Matt, "I shall want you to look after your honey and mine while I am away."

"Sure and I will," said Matt. "I will occupy yer cot out here; and while me one eye is fasht asleep I'll keep the other cocked on the honey."

Fred's journey down the river was prosaic enough. Heavy clouds were gathering, with every indication of rain. Everybody on the boat was glum to a painful degree, and Fred was glad to get into the business rattle of the city. He was fortunate to find ready sale for his honey at 10½ cents, and agreed to deliver it within a week. He was loth to leave the city so soon again; but putting business before pleasure, he took the very next steamer up the river. The indications of rain were more pronounced; but wiseacres said it would not rain; or if it did it would be of short duration, for it was a month too early for a general downpour. In spite of these predictions, it did commence to rain; and when Fred landed at Ghering's wharf it did pour. Matt had given faithful attention to the honey. To him every section looked as beautiful and precious as a diamond. The little cabin protected it nicely from the pouring rain.

"And now," said Fred, slapping Matt enthusiastically upon the shoulder, "if it will only stop raining we will have this honey down to the city, and our money for it, in less than a week."

But the rain continued, and the next morning the river commenced to rise.

"We will certainly haf a flut," said Mr. Ghering. "The water-sheds of old Shasta will sent down water enough for a dosen rifers; then look out for the levees further down."

The rain continued without intermission all day, and toward evening the river had become still more swollen, and swept swiftly around the chalk butte, carrying upon its muddy and turbulent surface much debris from far up stream.

"Fred," said Mr. Ghering, "I think you'd

better come ofer to the ranch to-night. I ton't pelief it a safe blace here."

"Why, bless you," said Fred, laughing, "this is the safest place on the whole ranch. Don't you see, my house is founded on a rock? and this butte has ten feet elevation above all the surrounding country. Your whole ranch would wash away before this butte would move."

"That vas all right, Fred; you vas your own toctor, and you take your own medicine. I only gif you the varning;" and Mr. Ghering went to his own cabin.

Fred stuck tenaciously to his rock and his honey; and Matt Hogan also, having the same confidence in the chalky bluff, cast his lot that night with Fred.

Their animated conversation about honey production and the proper marketing of the same enlivened the evening; but at length the monotonous roar of the river and the patter of the rain had a somniferous effect, and they stowed themselves in their blankets for the night.

They slept soundly, as young men do, until they were both wakened by a sudden tremor and jolt of the cabin. They both sprang out of their cots and out of the cabin with confused exclamations, and the scene that confronted them in the misty dawn sent consternation to their hearts. The raging river had broken through the old channel, and a swiftly running torrent many yards across was between them and the main land. There was no way of escape from the bluff. Again the whole bluff trembled, and the portion on the bend settled several feet. "It is being undermined!" shouted Fred in terror.

"Aye, that is so," said Matt; "an' may the blissed Vargin help us."

Another downward lurch of the great chalk bluff, and the water began to foam over the surface. The hives in the neatly arranged apiary were lifted upon the current, and sent tumbling and knocking together, spilling out the frames and bees, and rapidly disappearing into chaos.

Another lurch, and the little cabin with its precious contents began to swing sidewise. The stout work-bench upon which Fred had so faithfully worked began to swing out. They were up to the knees in water; and Fred, as though suddenly awakening from a stupor, shouted, "Matt, to the bench! to the bench!"

THE FLOOD.

At the same moment he jumped for it. Holding it against the current a moment he whirled it bottom up and shouted again, "Jump, Matt!" and they both clung to it as it shot out into the swirling, tossing river, followed by the cabin and the bursting crates of honey. The bench built of sycamore timbers, with the strongly braced legs, made a substantial raft for ordinary waters; but now even its strength was severely tested. Careening to one side, shooting like a log, water dashing violently over it, and, more dangerous still, the rushing and grinding debris alongside them; but amid the roar and tumult they clung to the braces with the despair of lost men.

Gnarled roots of trees would suddenly thrust their black specter-like arms out of the water,

and as suddenly vanish. The raft itself was lifted and nearly upset by them. Under the exciting strain of the moment Fred's imagination was getting distorted. He thought those vicious roots were Dawson's arms grasping for him, and he clung closer to the braces.

"Matt! O Matt!" he shouted in terror, as a huge root swung across the end of the raft; but, too late; faithful Matt Hogan, with a vain gurgling cry for help, was swept into oblivion. The same avenging arm crashed its way along toward Fred.

CORRECT BEE-SPACE.

Question.—What is the exact space required for a worker-bee to pass through, and that the queen and drone can not go through?

Answer.—It is no trick at all to exclude drones and let the worker-bees pass, as any thing from $\frac{5}{32}$ of an inch up to nearly or quite $\frac{7}{32}$ will do it. But when it comes to a space which will allow a large worker to pass and stop a small queen, we find that it needs a nicety of workmanship not found in the average bee-keeper. Queens and workers vary very much in size, and I have had several queens which would squeeze through an opening which many workers considered an effectual barrier to themselves, preferring to stay outside the hive rather than to try to go through the same. By most bee-keepers $\frac{5}{32}$ of an inch, or the merest trifle less, is considered to be the right size of perforation to use for all queen-excluding purposes; but quite a few say they find $\frac{3}{16}$ of an inch to work better with them than a narrower space, as it practically excludes all queens, with rare exceptions, while it does not bother the workers to any perceptible extent. Some seem to think that a laying queen can not pass through a space which will allow a virgin queen to go through quite comfortably; but I think this a mistake, as all of my experience goes to prove that any laying queen can pass through the same space when being fertile that she could pass before she became fertile; for it is the thorax which tests the ability of the queen to pass through a certain space, not the abdomen, as some suppose. The abdomen of any bee is soft and yielding, while the thorax will not give a particle from any pressure the subject itself can bring to bear upon it; and as the thorax does not change in size any, through the queen becoming a layer of eggs, it makes no difference whether the queen is laying or not as to the size of perforation she can actually pass through. I say *actually pass through*, because there is a great difference between the determination of a queen to *squeeze* through certain places, as a queen when laying any thing like her maximum number of eggs rarely tries to leave the brood-chamber proper; and if she does so try it is only in a feeble way. But let any queen which has been laying one, two, or three years get into such a state of excitement that she will go to piping and running about in a way similar to that of a virgin queen, and she will make as determined efforts to pass through any small space as she ever did in her life. To sum up: My experience has been that a properly developed virgin queen will very rarely get through $\frac{5}{16}$ of an inch. Worker-bees can crowd through $\frac{5}{32}$ of an inch; but if any thing short of that it becomes such hard work that the excluder is a nuisance to themselves and to their keeper. A space of $\frac{11}{64}$ of an inch will allow most workers to pass with simply brushing the hairs on their backs, while it practically excludes all queens, and certainly all drones; hence this latter size is my choice for a queen-excluder. Many of us would be pleased to hear from the managers of GLEANINGS on this point.

SUB-EARTH VENTILATION.

Question.—How can I secure sub-earth ventilation in my cellar, which is on a level lot? This cellar in which I wish to winter my bees the coming winter is very damp, and the building-site is on a very level piece of land. Can I get a current of air to enter the cellar by laying the six-inch tile on a down-hill plan, and sink a hole four feet square at the outlet of this tiling?

Answer.—The only difficulty I see with the plan given is lack of drainage. What will there be to hinder water coming into the hole you refer to whenever it rains during winter, or when it becomes warm enough to thaw the snow? Unless some means is provided to do away with this water it will be apt to come into the hole so as to cover up the end of the tiling just at a time or the times when your sub-earth ventilator would be of the most necessity for the welfare of your bees? Then there is another thing which perhaps you have not thought of: A sub-earth ventilator will do no good unless you have some means for the warm air to escape from the top of the cellar or room containing the bees. And even with a pipe at the top to let the warm air out, air will not circulate to any extent during a time when the temperature outside is the same as or warmer than that inside; and such times as these are just when you need fresh air the most in your cellar, if fresh air is *really* necessary, by special means, in a cellar for bees. If you can so arrange that a three-inch pipe can go from near the bottom of your cellar up into the pipe from the stove which you have a fire in every day, then you can be sure of a draft which will change the air in your cellar any day during winter, no matter how warm or how cold. In this three-inch pipe you should have some means for regulating the amount of air that is to pass through, from the full amount to none at all, as you and the bees desire. Your

sub-earth ventilator should also be below frost, and from 100 to 150 feet long, so that the frosty air may be heated so as not to send a chill over the cellar when it enters. But let me whisper a word or two: After you have tried this sub-earth ventilator, arranged as above, for a winter or two, turning the regulator in the pipe from one to ten times a day, you will soon find yourself turning it off or shut the most of the time, till finally you will leave it shut altogether; for all of my experience goes to prove that James Heddon was right when he said, "Keep the temperature of your cellar up to 45° Fahr., and you need have no fears of dampness or bad air. If at any time the cellar gets too warm, ventilate it at the top." I quote from memory, as I have not time to hunt the matter up. This and my own observation was what led me to let my sub-earth ventilator fill up, and dispense with the upper one entirely. But if any person has fears in this matter, the proper way is for him to test the thing till he is satisfied.

Borodino, N. Y.

[Sixteenths and thirty-seconds are hardly small enough to give the exact size best adapted for excluding queens, but not too small to hinder workers. Our present zinc, by a micrometer measure, is $\frac{165}{1000}$ of an inch wide. Our first zinc had the perforations $\frac{170}{1000}$; but it was found that occasionally a developed queen would go through; but since we changed to $\frac{165}{1000}$ the zinc has given universal satisfaction. It has been pronounced right by such authorities as P. H. Elwood and Capt. J. E. Hetherington. Dr. Miller did report that he had a queen go through this size; but the queen must have been undersized around her waist or thorax; for the doctor sent a strip that she went through, and this measured $\frac{165}{1000}$. Smaller than this size hinders the workers greatly, especially when filled with honey. I tried, very thoroughly, zinc $\frac{160}{1000}$—a difference, you will notice, of only five one-thousandths—and it bothered the workers not a little.—ED.]

Heads of Grain, From Different Fields.

A LEAD FRAME-SPACER.

Mr. Root:—As Dr. Miller is anxious to have some frame-spacers, I thought you might be interested in my style of spacer. They are made of lead—the softer the better; are cone-shaped, and are satisfactory so far as I have used them. The base is as wide as the side-bar, and the top is a little wider than the nail-head. In the top of the cone the nail-head is sunk into the lead by reaming it out for the nail. I think you will understand from the crude outline I have attempted to draw, that you put the head on the nail, and have the two separate. The lead is the head, and you simply drive the wire nail through it.

The advantage of my spacer is this: The head will not catch and hold fast in the wire of an extractor. The nail being covered by a soft metal like lead, if, by accident in uncapping, the honey-knife slips and hits the spacer, no damage is done to the knife. The lead may be cut, but it does not damage the spacer either. Only a very hard knock will cut deep enough to hit the nail. They can be used on any frame, and made any length. The ones I used I ran in a mold of wood. A mold like a bullet-mold, to run 10 at a time, could be manufactured by your company, and sent out to the bee-keepers, and they could run them themselves; or a machine like a type-machine could make them by the thousand. You could sell them by the pound, like shot. Any bee-keeper could buy his wire nails at home. The base of the cone of my spacer should be a little hollow, to fit down and have a bearing surface all around. They could be made of pressed paper, and it might be better than lead if it is not too expensive. J. R. CHALKER.

Empire, Or., Sept. 29.

[Your spacer is probably a good one, and no doubt most bee-keepers can make them in the way you describe. But a very much cheaper article is a furniture-nail. These can be bought with heads very much like your lead spacer.—ED.]

MAPLE-SUGAR MOTH-WORMS; HOW TO GET RID OF THEM.

I have discovered something of interest to maple-sugar makers and dealers. Honeycombing of maple sugar has been a problem as yet unsolved by many of us. This is a term we have applied to the soft holes that have appeared in maple sugar, especially in summer. I took two pieces of badly honeycombed sugar out of a grocer's show-case, and with the naked eye I saw the little fellow that does all the damage, crawling about. He is a very lively little rascal, and after a while he makes a chrysalis and goes into the butterfly state; and I have seen these silky houses and the webs they have spun. So the cause of all the trouble is a moth that lays eggs. They hatch into worms, and they eat the sugar and burrow in it.

Now for a remedy. I am informed that bisulphide of carbon put into a saucer, and allowed to evaporate in a tight box with the sugar, absolutely kills all worms, etc., except unhatched eggs. This stuff is very inflammable; and when buying you should tell the druggist how you intend to use it, and he will give you valuable information, and help you to avoid accidents. On exposure to the air, the drug all evaporates and leaves no smell.

Chicago, Ill. HERMAN F. MOORE.

[Mr. Moore has sent us, in a vial, one of the worms. It is $\frac{1}{4}$ inch long and about $\frac{1}{32}$ inch in diameter, yellow in color, with a brown head. In light-colored sugar it might very easily escape notice.—ED.]

RIVAL BEE-PAPERS AND THEIR POLICY.

Two rival editors of two separate rival bee-periodicals took the train at Chicago, rode in the same car, slept in the same berth, in the same bed, ate at the same tables—in fact, were together much of the time for a whole week, and did not even quarrel, nor were they jealous of each other in convention. Suppose, for instance, that the two aforesaid editors were not on friendly terms; that they went to the convention on separate roads; that they sat on opposite sides of the convention room; that whenever one proposed a policy the other would oppose it. The actual situation at the Lincoln convention — in fact, at every other in later times—has been the very opposite. At two different conventions the editors of the *American Bee Journal* and GLEANINGS have sat in the same chair. A very few delight in calling this condition of things "mutual admiration." Call it what they may, it is doing tenfold more for the bee-keeping world than the other policy could give.

GOVERNMENT AID AND APIS DORSATA.

AT the Lincoln convention a resolution was passed condemning the action taken by the Erie Co., N. Y., Bee-keepers' Association, recommending that the general government send an expedition to the far East to secure *Apis dorsata*. This action of the North American was based on the ground that it was unnecessary and impractical; that government aid, if any be secured, should be diverted in other directions. Some of my friends at the convention knowing that I had expressed myself in a similar way thought that on page 528 of GLEANINGS for July 15 I had changed my mind. A careful reading of the article by W. K. Morrison, and of the footnote in question, will convince them that I did not make a "flop-over." I was at first opposed to the expense on the part of the government, and am yet; but our correspondent, Mr. Morrison, has a scheme for getting these bees through the influence of friends high in authority, from the different governments of the world. His plan is, in a word, to secure the coöperation of leading scientists, men of means, steamship companies, and diplomats, of the world. Financial aid from this country he considers out of the question.

"THE USE OF DRAWN COMBS; SOME DRAWBACKS."

IN an article under this heading in the *American Bee Journal*, Mr. E. T. Abbott, the writer, says: "There are two drawbacks in the use of drawn comb, which, in my opinion, can never be overcome. One of these is the tendency of honey to sour when it is put into the combs so rapidly;" and "the other and perhaps most serious objection is that one can never secure as delicate and friable comb in this way as he can when the bees build the comb as they store the honey." As to the first objection, I can not see why that would not apply with equal force to honey stored in extracting-combs. I have always supposed that liquid honey from Missouri was as good as that from any other locality. If it is not, then Mr. Abbott's objection has force only in his State or locality. As to the second objection, those of us who have advocated the use of drawn combs, or, rather, called attention to the advantage that would accrue from their use, have had reference, not to *full-depth combs*, but to *comb leveled down* with the B. Taylor leveler—at least, that was what I meant. This would make the cells anywhere from $\frac{3}{16}$ to $\frac{1}{4}$ in. deep. I believe it is generally admitted that unfinished sections of full depth, when filled with honey the second time, and capped over, do not make first-class comb honey. B. Taylor's idea was, as I tried to point out, to level these combs down to a point where bees would have to rebuild and at most leave only the base or septum and a part of the original cell-wall as made the year previous. Such rebuilt comb is as "delicate and friable" as any. I have seen and sampled just such comb honey, and it is fully equal to any drawn out from foundation that I ever saw; therefore I do not see that either one of Mr. Abbott's objections stands in the way of the drawn combs that I referred to at least.

"HONEY AS FOOD; WHY IT SHOULD BE EATEN."

A VERY interesting article bearing the above caption appears in the *American Bee Journal* for Oct. 8, by Prof. A. J. Cook. After discussing the various kinds of foods necessary to make life and health, the professor speaks of the marked difference in the physiological effects of cane sugar and honey. "Until a comparatively recent date," he says, "cane sugar was unknown, if we except maple sugar. . . . Thus in the olden time honey formed almost the exclusive sugar. . . . I have been told by some excellent physicians that they thought some of the worst diseases of modern times, especially Bright's disease of the kidneys, were more prevalent than formerly, and they thought it due to the large consumption of cane sugar, which was all unknown in the long ago. . . . The digestion of food is simply to render it osmotic, or capable of being taken through an organic membrane — capable of being absorbed. We eat starch. It is non-osmotic, and would lie in the stomach and intestines indefinitely, except that by digestion it is changed to a glucose-like sugar. . . . Cane sugar, though somewhat osmotic, is not readily absorbed." Then he goes on to show that nectar is digested or transformed by the bees, making it what we call honey,

and this makes it a safer food than cane sugar. Again, he adds: "There can be no doubt but that, in eating honey, our digestive machinery is saved work that it would have to perform if we ate cane sugar." And then he concludes by stating, on the authority of physicians, that "the large consumption of cane sugar by the nineteenth-century man is harmful to the great eliminators—the kidneys—and so a menace to long life and health."

Prof. Cook is doing a good service in preaching the good doctrine that honey is a far safer and much better sweet to eat than the modern sugars of the day. Indeed, I *know* of some physicians who are recommending the use of honey in place of sugar to their patients who can't eat cane sugar. I think it would be well for those who peddle honey from house to house to emphasize these facts to their customers.

THE MANUFACTURER AND THE DEALER; INDISCRIMINATE CREDIT.

I HEARTILY indorse the paper that was read by Mr. E. T. Abbott in defense of the dealer in apicultural supplies. He made the point that he is a producer just as truly as is the man who keeps bees and markets honey, or the owner of a factory who takes boards and makes them into hives. He deprecated the tendency on the part of the manufacturers to bring those dealers into unfair competition with themselves (the manufacturers), owing to the pressure of other competitions from other manufacturers. More than one dealer had bought early in large quantities; and, before the season was out, had found that the firm from whom he secured his goods, owing to dull trade, was offering the same goods, *in small quantities*, for less than he had paid for them by the carload. Continuing, he said: "There is no greater curse to modern society than the miscellaneous-credit system. Credit may be a good thing; but I am honest in the opinion that it would be a blessing to all if no man or woman could get any thing for consumption before paying for it. . . . A good motto to adopt, especially for young people, is to 'pay as you go;' and if you can't 'pay,' don't 'go.'"

By the way brother Abbott looked across the room at me I concluded he was expecting an onslaught from my quarter; and as what he said accorded with my notions I concluded to say nothing. He finally said he would like to hear from E. R. In reply I indorsed the paper entire; and that, while we (The A. I. Root Co.) might have been guilty, in some cases, of unfair competition with the dealer, it was not intentional; that, as brother Abbott has been smarting under this kind of competition; and as he had bought of other manufacturers, I took it that the "other fellow" was the one who had been giving him the occasion for his remarks. However, it will do none of us any harm to take the dose of medicine, even if we do not like the taste of it.

I wish especially to indorse Mr. Abbott's point that *miscellaneous* credit is a real damage to society. It is very much easier to buy goods before the money is in hand than to pay for them after the goods are received. The dealer, as well as the honey-producer himself, should be sure that the wherewith will be in hand at the time the bill is due. The surest way to be sure is to have the money, not in *prospect*, but ready to pay over before the order is made.

HON. E. WHITCOMB.

ONE of the men who figured prominently at the Lincoln convention was Mr. E. Whitcomb, of Friend, Neb. He was born in 1843, in Susquehanna Co., Pa., and at the age of ten years his parents moved to Lee Co., Ill. On the 25th of Aug., 1861, he enlisted in Co. A, 34th Illinois Infantry, in which he participated in all the campaigns in Kentucky, Tennessee, and Georgia, taking part in upward of 50 engagements, including Sherman's march to the sea, and the march through the Carolinas. He came to Nebraska in 1870, and settled on a homestead adjoining what is now the city of Friend.

As a bee-keeper, he has been a leader in his State. For the past eight years he has filled the position of president of the Nebraska Bee-keepers' Association, and has had charge of the apiarian department at the Nebraska State Fair for the past 12 years. At first the exhibit could have been hauled in a wheelbarrow; but now, I am informed, it requires the largest and best arranged honey exhibition hall to be found anywhere in the world. I have already secured a photograph, and will give to our readers the picture of this hall, in a future number. Mr. Whitcomb also gathered together and made

the Nebraska exhibit at the Columbia exposition, where he secured for his State four medals and diplomas.

In 1877 he was a member of the lower branch of the State Legislature, and is now actively engaged in political work. I believe he is a candidate for Senator from his district, and bee-keeping friends told me that he had more than an even chance of securing the honor.

Mr. Whitcomb is of large physique and commanding presence, and one also who wields considerable influenee. He is editor and publisher of the Friend *Telegraph*.

NEBRASKA AS A HONEY STATE; HEARTSEASE, ETC.

BEFORE I attended the Lincoln convention I had the impression that Nebraska as a honey State ranked only as second grade; but on going into the State I was agreeably surprised to learn of its great resources, not only in the line of agriculture, but of its possibilities in the line of great yields from single colonies as well as from whole apiaries. If it is not already, it soon will be one of the great honey States. Beautiful in climate, rich in soil, peopled with the best blood from all over the country, a grand future is in store for it.

One thing that struck me on the way was the immense cornfields. A five-acre field in Ohio seems like a large one; but it was no uncommon sight to see forty or fifty acres of corn as we sped along on the cars; and I was told that some fields had as high as 100. And such corn!

But the thing that interested me most was the large amount of heartsease that we could see all along the waysides, in the stubble-fields, everywhere it could get a foothold. I was told that there were hundreds of acres of it, and no bees in reach to gather its nectar.

The heartsease of the West is very like and perhaps the same as smartweed of the East. The latter is a low-growing, sprawling plant, which probably in Nebraska would grow into a large vine, and be called heartsease. Here in the East it rarely if ever yields any honey—at least, not enough to make a showing in the hive. As announced in our last issue, Mr. Delong stated before the convention that he secured as high as 450 lbs. from a single colony. Indeed, if I understood him correctly after the convention, he had two such colonies that gave such a remarkable record; and his average was 250 lbs. All of this was from heartsease. Other bee-keepers reported heavy yields from the same source. The extracted heartsease that was on exhibition was of a beautiful rich amber. The flavor of it was not just to my notion; but very many do like it; and while it does not rank alongside of white clover and other qualities of white honeys, it brings a fairly good price. Besides the heartsease, alfalfa and sweet clover should be given prominence in the State.

I noticed that the wild sunflower—a very small plant with us in Ohio—perhaps three or four feet high, was six and eight feet high in Nebraska, and every thing else seemed to be in like proportion.

Right here I can do no better than to make a couple of extracts from a paper read by Mr. L. D. Stilson, editor of the *Nebraska Bee-keeper*, before the convention:

> For several years past the great bulk of our honey has been produced from heartsease, a plant something like the smartweed of the East. It grows in every waste place, it springs up in every stubble-field, and, no matter whether it is dwarfed by drouth to a tiny plant of a few inches, or whether watered by copious showers, and grows to the height of a man, it always blossoms full and is always laden with honey.
>
> The climate of our State is such that plants secrete very rich nectar, so that the bee can gather it; and, after storing in the hive, it can at once be sealed over, retaining to a great extent the aroma of the flower from which it was gathered. A few years ago we extracted from one super clean, returning the combs, and in four days we extracted fifty pounds again, nearly all sealed, and weighing fifteen pounds to the measured gallon.

By consulting Gray's Botany I find that heartsease belongs to the violet family—a very small one. Most of the heartsease bloom seemed to be of a purplish red. I saw some in the field that was pink, and also a few blossoms that were pure white. The smartweed of Ohio is of a purplish red.

P. S.—While conditions are inviting in Nebraska, especially so last season, don't "pull up stakes" without fully investigating. Take the time to write, and if all looks well go yourself first. It is but fair to state in this connection that Nebraska has had its drouths, and is liable to have them again. Then there are the heavy winds of the prairies; and then, too, the wintering problem is not solved by any means.

BEES AND GRAPES; A REPORT FROM PROF. W. J. GREEN, OF THE OHIO EXPERIMENT STATION.

YOU will notice by referring to pages 647 and 706 that several of our friends around Medina have claimed, as they have several seasons before, that the bees were destroying their grapes. We tried to convince them it was a mistake, but it was a pretty hard matter to convince at least some of them. Finally my esteemed friend Mr. George Thompson (the one who first helped me to start in bee culture, see introduction to A B C book) told me the bees were at work on his grapes in very great numbers. But he is too careful a man to commit himself fully on the start. He said he was going to make a careful investigation in order to see whether the bees were really guilty or not. A few days later he told me he had found the thief. He said a little bird was hopping from bunch to bunch, making needle-like perforations so quick that he could hardly see how he did it; and that, after the bird, came the bees. We expressed much interest, and asked him a great many questions about the bird. A

few days ago he came into the office triumphantly, bringing us the bird alive and in a cage. He said it became so tame that it actually came in at the open window, and began its work on the grapes where they stood in a basket on the table. They captured the bird and brought him down to us. We forwarded him at once to our Ohio Experiment Station; and Prof. Green, the horticulturist, has given us the following very full and complete paper in regard to the matter:

Mr. Root:—Yours of the 14th, with the bird, is at hand. It is a goldfinch, or wild canary, commonly called. I have no doubt about its guilt, but I am sure that there are other birds equally bad. We had considerable trouble with birds one season in Columbus, and, if I remember correctly, it was the bluejay; and I am credibly informed that the turtle dove is a culprit also. I believe that, if you were to inquire of naturalists throughout the country, the list of guilty birds would be found to be much longer than most people suspect.

I have noticed the controversy concerning the bees and grapes, and thought of writing you about the matter, but did not, because it seemed to me that, if people would observe a little, there would be no grounds for controversy.

Grapes have cracked very badly this season—that is, some varieties have, and there is more or less of cracking every year. One gentleman told me that the grapes which he had inclosed in paper sacks had cracked also. This proves that bees did not do the work; but such proof is hardly necessary, for any one can easily convince himself that grapes crack open when the weather is just right. A crack is so unlike a puncture that no one need be told the difference. So, also, the bill of a bird makes such a characteristic mark that no one need mistake it for any thing else. Grape-growers are so familiar with these things that I do not think they very often lay the blame to the bees. Certainly no one who has worked with grapes a few seasons ought to blame the bees when the causes named are so evident. Of course, it is sometimes rather unpleasant to have the bees swarming about the grapes; but it is just as well that they get the wasting juices, and better, in fact. I have known bees to be very troublesome about overripe raspberries but it was the condition of the fruit which attracted them as in the case of the grapes.

There is one reason for the discrepancy in the opinions on this matter which I may point out, for it comes in my line of work. Varieties of grapes differ greatly in their susceptibility to crack, and birds prefer some above others. Thus the bees may be working on one person's grapes and not on those of his neighbors. If the man who is losing his grapes lives near an apiary he may rashly conclude that he is suffering because the bees find his grapes convenient. I have often heard this alluded to in a way that showed that the opinion was held that the nearness of the bees proved their guilt. The simple fact that a man who lives near where bees are kept is losing his grapes proves nothing whatever against the bees.

I have also heard it said that bees work on grapes when there is a scarcity of honey, and the fact cited to prove their guilt. It may be that they will work more freely on grapes when they do not find honey plentiful than when it is abundant. I am not able to argue the question from the bee-keeper's standpoint; but as a horticulturist I can say that it is nonsense to claim that the cracking of grapes is coincident with the scarcity of honey.

To my mind it seems about as reasonable to accuse bees of breaking open grapes as to suppose that they will make holes in maple-trees to get the sap. Bees like maple sap, and at times they are quite troublesome about the camp; but no one would indulge in such an absurdity as to claim that they have any thing to do with making the sap flow. It may not seem so absurd to most people to claim that they open grapes; but those who know most about bees find it about as hard to understand how bees can break the skin of grapes any more successfully than they can bore through the bark of a maple tree.

I used to amuse myself examining bees, flies, and various insects under the microscope, but I never discovered that the honey-bee is any better equipped for puncturing grapes than the housefly. It is common sense, when looking for the reason of things, to assign the force to the nearest apparent cause. If I were looking for the cause of any unusual behavior in a tree or plant I would first examine carefully all of the surroundings, and not go over into the next field to find that which reason would tell me must be close at hand, nor should I attribute to the moon or stars that which abundant experience convinces me must belong to the earth.

Now, we know that birds puncture grapes, and in some cases ruin the crop; and we also know that grapes crack, even when tied up in paper sacks; but we do not know that bees have the power to make a hole in the skin of the most tender grape. Why, then, go so far out of our way to prove the bees guilty? If we are going to abandon common sense in the matter, why not lay it to the moon at once? The moon is said to have a powerful effect in warping shingles, and can even tear down a rail fence and pull potatoes out of the ground. If it can do these things, it seems strange that no one has discovered it can burst the skin of grapes.

Wooster, O., Oct. 16. W. J. GREEN.

The picture and description of goldfinch, in the Standard dictionary,* doesn't agree with the specimens we sent, or with the ones we have subsequently captured. The goldfinch has more yellow, and the bill is short and blunt, while that of the little culprit is perhaps ½ inch long, and very sharp. With this exception it looks like the goldfinch. Is there not some mistake, Prof. Green?

AMALGAMATION AT LINCOLN, "CRAZY SHOTS," ETC.

IN the paper by Thomas G. Newman, read at the North American convention at Lincoln, he used this language:

The "nonsense" which has been published like this: "I say, away with amalgamation, and let the Union set about to reorganize itself as soon as it can," is simply ridiculous. It has been a success from its very inception. It asks nothing but good will from its neighbor—the North American Bee-keepers' Association—and can live and prosper, doing its own work—that work for which it was created—without losing its head, its temper, or its understanding. Its uniform success and its excellent financial condition are something all should be proud of instead of hurling at it such crazy "shots" or empty or cracked "shells" as the foregoing quotation, and calling it a "poor fizzle," etc.

I am a little surprised that the old wheel-horse of the Union and of the *American Bee Journal* should fall into the error (unintentionally perhaps), of giving *a part* of a quotation or just enough of it to mislead. The language that Mr. Newman refers to appears on page 609 of GLEANINGS. This is what I actually said:

The Canadians are away ahead of us in that they have a flourishing society almost national in its character, but which really covers Ontario only. Let us on this side of the line have something big enough to cover the United States only, and one that will answer the purpose of the two existing societies. Having two, as we now do, is expensive and unnecessary while it is perfectly evident that one could do the work of the two. Personally I should be glad to see them amalgamated, providing disagreeable complications would not arise. As there is a possibility of that, I say away with amalgamation, and let the Union set about to reorganize itself as soon as it can.

The reading of the whole shows that the part

*The ornithology in this work was edited by an expert, and I assume that the cut and description is reasonably correct.—ED.

of the quotation which Mr. Newman gives does not fairly set forth my opinion, or, rather, he leaves out the proviso upon which the proposition, to which he takes exception, hinges. All through the editorial I expressed myself as in favor of amalgamation; but I was afraid that, if we tried to force it, we should accomplish nothing. The point I desired to make was that I was in favor of *something* that would take hold of the matter of adulteration and dishonest commission men; and I thought that something ought to embody the features of the two existing organizations, whether amalgamation were effected or not. When we got down to business, there were "no disagreeable complications," as I at first feared; neither were there "two distinct parties arrayed against each other," as Mr. Newman seemed to feel that there was; and as I had all along been in favor of amalgamation, *providing* there were no "disagreeable complications," it was not at all inconsistent in me to help it along all I could, which I did in the capacity of the committee which was appointed—made up of Dr. Mason, Mr. York, and myself.

Mr. Newman implies that I called the Union a "poor fizzle;" but I can not see that I anywhere so styled it. I have all along insisted that the Union was more national than any thing else; and when I used the term "poor fizzle"—see last sentence of first paragraph of the editorial in question—I referred to *any* organization that was trying to cover one or more countries, and making a failure of it. I did not have in mind the Union at all, because elsewhere I referred to it (the Union) as a grand success, except that I thought it ought to enlarge its field of operations by taking in the questions of adulteration and dishonest honey-buyers, which it could do under its constitution.

The constitution formulated by the committee above mentioned, as stated in our last issue, was read and adopted article by article, some being changed by the convention after discussion. I am sure the General Manager will indorse it, and the Union will adopt it with little if any change. When so adopted by this latter organization the new Union will be practically the same as the old, with the additional feature of having annual meetings, the president and other officers of the old North American being elected by the members present, and the General Manager by the vote of all the members, whether present or not, this latter vote being taken by ballots received by mail.

The following is the constitution as it was read and adopted by the North American, and which that body now submits to the Union:

The committee on union and amalgamation reported as follows, through Dr. A. B. Mason:

1. This organization shall be known as the United States Bee-Keepers' Union.

2. Its objects shall be to promote and protect the interests of its members, to defend them in their lawful rights, to prosecute dishonest honey commission-men, to enforce laws against adulteration of honey, and to advance the interests of bee culture in general.

3 Any person can become a member by payment of membership fee of $1 annually on or before February 1, to Secretary or General Manager, except as provided in section 8 of article VI.

Those who are members of the N. A. B. K. A. and N. B. K. U. when this constitution is adopted by each organization, shall be members of this Union.

4 The officers of this Union shall be a president, vice-president, secretary, and a board of directors, which shall consist of a general manager and six directors, whose term of office shall be for one year, or until their successors are elected and qualified; and the director receiving the largest number of votes shall be chairman of the board of directors. Those who are officers of the National Bee-keepers' Union, when this constitution is adopted by said Union, shall constitute the board of directors of this Union until their successors are elected and qualified.

5. The President, Vice-president, and Secretary shall be elected by ballot by a majority of the members present at each annual meeting of the Union, and shall constitute the executive committee. The board of directors and General Manager shall be elected by ballot during the month of December, of a majority of the members voting; blank ballots for this purpose, accompanied by a full list of the membership, which shall be mailed to each member by the General Manager; and said ballots shall be returned to a committee of two members who shall be appointed by the executive committee, whose names and postoffice address shall be sent to the General Manager by said executive committee on or before the 15th of November, preceding the election. Said committee of two shall count the ballots and certify the result to the General Manager during the first week in January.

6. It shall be the duty of the President to preside at the annual meeting of the Union, and perform such other duties as may devolve upon the presiding officer.

The Vice-president, in the absence of the President, shall perform his duties.

The Secretary shall keep a record of the proceedings of the annual meeting; receive membership-fees, furnish General Manager with names and postoffice address of those who become members at the annual meeting; pay the treasurer all moneys left in his hands after paying expenses of the annual meeting, and perform such other duties as may be requested of him. He shall receive such sum for his services as may be granted by the board of directors, not exceeding $25.

The General Manager shall be secretary of the board of directors, and keep list of names of members and addresses, receive membership fees, and be treasurer of the Union. He shall give bond in such amount and with such conditions as may be required and approved by the board of directors. He shall also send each member a statement of the financial condition and report of work done by the board.

The board of directors shall determine what course shall be taken by the Union upon any matter presented to it for consideration and does not conflict with this constitution, and cause such extra but equal assessment to be made on each member as may become necessary, giving reasons to each why such is required, providing that not more than one such assessment be made in one year, and to an amount not exceeding a membership fee, without a majority vote of the members.

Any member neglecting or refusing to pay said assessment as required by the board shall forfeit his membership and right to become a member of the Union for one year after said assessment becomes due

The board of directors shall pay the General Manager such sum for his services as the board shall deem proper, but not to exceed 20 per cent of the receipts. Said board shall meet at such time and place as it may decide upon.

7. Funds may be used for any purpose that the board may consider for the interest of its members.

8. Any vacancy occurring in the board may be filled by the executive committee, and any vacancy in the committee may be filled by the board.

9. The Union shall hold an annual meeting at such time and place as may be agreed upon by the executive committee.

10. This constitution may be altered or amended by a majority vote of all members, providing notice of said alteration or amendment has been given at a previous annual meeting.

LINCOLN CONVENTION REPORT.

My report, as will be seen, of the Lincoln convention will be made up of fragments here and there. A few of them appear in this issue, editorially and elsewhere. The only essays or papers that I publish in full are the poem by Eugene Secor and a paper by Mr. York, of the *American Bee Journal*. The first named was encored so heavily by the bee-keepers that I thought our readers would like to see what it was. The second is a paper on a very important subject, and I hardly need to say that I indorse Mr. York's ideas. Here are the poem and essay in question:

SECOR'S REPLY TO ADDRESS OF WELCOME AT LINCOLN, NEB.

We're glad to be invited to the "wild and woolly West,"
Where the cowboys roam the country with neither coat nor vest
(According to the silly claim of many Eastern folk
Who never seem to comprehend a breezy Western joke).
But some of us have "traveled"—in fact, been here before;
Have felt the grip of Western hand extended at the door.
We don't suppose that Indian raids are every-day affairs,
Or that the hungry prairie-wolf will snap us unawares;
And neither do we look for men in this new prairie State
Who lack in kindness or in worth because 'twas peopled late.
We know that all of virtue and hospitable cheer
Are not confined to older States—they've taken root out here.
The hearts of these our brethren we should expect to find
Responsive as their generous soil—the richest of its kind.
Boast not, ye Yankee farmers, pent up between the hills,
Of the greenness of your verdure or the music of your rills;
Here broad and fertile acres wait for millions yet to be—
Await the march of empire west—the bivouac of the free.
These prairies, like an ocean vast, in billowy grandeur roll,
A blessing in each valley and a promise on each knoll.
There's food enough in this rich soil, stored up long, long ago,
For ten times ten the present needs of population's flow.
So if the hive of industry be overcrowded east,
There's room for several swarms out here ("priority rights" released).
But from an economic view my mental Kodak shows
No drones need be imported here—the *worker* is what "goes."
This climate is a little "hard," so I have been informed,
On idlers; and if such migrate they'll wish they'd never swarmed.
I said that none but *workers* are in demand out here;
Perhaps you bee-men present may think it some what queer
That *queens* are not a vital part of such a colony.
They are, my friends, important; but don't you clearly see
Nebraska queens are just as good—and acclimated too—
As any foreign race or blood, albeit old or new?
So if you've not contracted, and you chance to find one here,
She's warranted, I'll venture, to be without a peer.
'Tis Eastern blood and Western vim that make the world go round;
In other words, they make things "hum"—to us a cheerful sound.
The greeting which your speakers give is prized by us bee-men;
We take most kindly to sweet things—perhaps we'll come again.
We'll not, I hope, inflict a sting for kindness you have shown;
Such honeyed words, such royal cheer, demand our love alone.
We represent a brotherhood whose craft, for ages past,
Has been esteemed a worthy one because their lot is cast
With those who in the field of toil create the world's great wealth,
And at the same time lessen not its pleasures or its health.
The sweets of life we gather in; we garner nature's waste;
We horde the nectar from the flowers to cater to man's taste:
We fructify, with busy elves, the orchard and the field:
The spoils we get are but the fee for making blossoms yield.
Without our winged wizard-priests that marry distant flowers,
This earth might be a desert waste where now are fruitful bowers.
Bespeak we then for these our aids, and keepers too, as well,
The word of praise that worth demands—that worth their works do tell.
I notice that *you* have a bee, quite common everywhere—
At least in Uncle Sam's domains she is by no means rare:
And, like the "busy bee" of song, she buzzeth night and day
(In bonnets mostly worn by men) in a most bewitching way.
The "presidential bee" is here as vanguard of our host,
With *silver* bands instead of gold—the marks we prize the most.
In this campaign 'twixt white and yellow we look with longing eye
For some bright ray—some star of hope—from out the murky sky.
For, whether gold or silver wins, *we* want *prosperity*.
We need the *factory's* busy hum to stimulate the bee;
For people eat best when they work; and bees increase and thrive
When some one buys the royal food found only in the hive.
The city where now congregate the chosen of our clan
Was named for one immortal in the heart of every man.
Immortal may the friendships be which on this spot we form,
That, like the granite hills of God, shall stand both time and storm.
And may the bond of union between the West and East
Grow stronger as the years go by and each returning feast.
Fair city of this western plain the salted seas between,
Gem of mid-continent beauty, of prairie cities queen,
We bid thee prosper and grow strong, and, like that giant name
Whose hallowed sound is Freedom's boast, be ever known to fame.

HONEY COMMISSION-MEN AND ADULTERATION.

The subject assigned to me is not only a very important one, but is really a double one—though in some instances as closely united as were the once famous Siamese twins, for are not honey commission-men sometimes also large adulterators of the sweet product of the bee?

It may be, however, that I can make myself better understood, and also do better justice to my double subject, if I speak of the honey commission-men, and then follow with a few words on that modern abomination—the adulteration of honey.

First, I want to say that I do not for a moment question the honey commission-men's right to live. They are a necessity—I mean the *honest* honey com-

mission-men. The other kind may be a necessary evil, though I am inclined to doubt it.

I sometimes think that honey commission-men are just what bee keepers make them, or allow them to become. But some of them, I must confess, are as "wise as serpents" and fully as harmful. It is surprising how easily otherwise wide-awake bee-keepers permit themselves to be "roped in" by flaming honey-circulars, sent out by new and untried honey commission-men, quoting high prices for honey. If those who receive such consignment-soliciting circulars would stop to consider for only a moment, it seems to me they would be wise enough to know that any quoted prices higher than those given in the market columns of the bee-papers, must be entirely fictitious, and wholly unreliable—simply thrown out as tempting "bait" to catch the unwary and easily duped.

I know that we all like to get high prices for our honey or other products, and yet we should not be such blanked fools as to suppose that a *new* honey-commission firm can secure better prices than an *old* firm that perhaps has worked up a large and regular demand for honey in its years of upright dealing.

Then the proper thing for honey-producers to do, is to let *new* honey-commission firms entirely and severely alone, *unless* satisfied beyond all doubt of their ability and willingness to do just as they propose.

Residing in what is thought by many to be the greatest honey-market in the world—Chicago—I am often placed in a position to discover some things about the doings of honey commission men that few have the opportunity to learn. For instance, you come to Chicago with one or more carloads of honey. You call upon a large honey commission firm; they of course are fully informed as to the needs of the market, or, if necessary, they can easily communicate by telephone with all the other large honey-dealers. In fact, no one will make you an offer, but keep you running from one firm to another, yet always wanting to know *your* figures on the honey—just what *you* are *asking* for it. After one of the firms finally purchases your honey—likely at their own figure—they will offer to divide it with the other honey commission-men at an advance of perhaps ½ cent per pound, or even at the same price they paid for it. Thus you see they really can work together, and there is practically no competition whatever.

Firms with plenty of available cash capital can buy honey outright, in carload lots, at a greatly reduced rate, and throw it on the market at a very slight advance—say one or two cents per pound on carload lots—thus making from $250 to $300 per carload, and running the market price down. On the other hand, permit me to quote two sentences from a private letter that I received from an honest honey-commission firm last February, referring to another firm who *claim* to have plenty of cash capital, but some of whose dealings will hardly bear investigation. The two sentences read thus:

"*They* boldly say that *we* are the cause of grocers having to pay over 10 cents per pound for choice comb honey. *Our* competition makes honey cost *them* so much—*more* than it otherwise would!"

Again, the *dishonest* honey commission men have every thing in their own hands, once they have your honey in their possession. There is scarcely a law by which you can hold them in case you catch them at all. They can sell your consigned honey for whatever they please, and return to you as little as they please. You have only to submit, and next time let such alone, if you are wise.

But there are *honest* honey commission-men. What producers should do, is to find such, and encourage them as much as possible by giving them their patronage and endeavoring to aid them in every way they can—by preparing and packing their honey as the particular market requires, and allowing them to be the judges as to the best time to sell. By crowding the honest and careful commission-men, you may often cause the loss of quite a good deal on your shipment. Forced sales must always be at the lowest figures.

But honey commission-men are not the worst evil with which honey-producers must contend, as we shall presently see.

The world has had what is known in archæology as "Ages"—the Stone Age, the Bronze Age, and the Iron Age. But just now we seem to be in the midst of another "Age," namely, *the Adulteration Age!* It appears that every thing susceptible of adulteration is besmirched with this growing, devastating fraud. Sanded sugar, corn-cobbed maple syrup, watered milk, paraffined beeswax, and glucosed or corn-syruped honey. But enough for our consideration, perhaps, is that of honey adulteration.

Who are the slimy bipeds, guilty of the adulteration of our pure, sweet product? They are mainly the city wholesale grocers, the syrup-mixers, and some of the so called honey commission-men! I am credibly informed that out of 40 of the largest city customers of a certain Chicago honey-dealer, 27 adulterate the honey they purchase! Think of that, my fellow bee keepers! How many times over can those 27 frauds multiply the honey product, when the price of glucose to-day in Chicago is but *a trifle over one cent per pound?*

You have often seen one-pound tumblers holding a clear liquid with a piece of honey-comb in it. Well, at least one honey commission-man in Chicago puts up such, and there is just one cent's worth of pure honey in each tumbler, and the rest is glucose. It retails at 10 cents, and costs 3 cents, including the glass tumbler.

Why is glucose used almost wholly as a honey adulterant? Because it carries no taste or flavor of its own—so that when only a *little* honey is added it gives the honey flavor to the whole. Another reason is, that glucose does not granulate as does most of the pure extracted honey; this latter is looked upon with suspicion, hence as glucose does not candy, it is a feature in its favor with the uneducated.

The agent of one Chicago adulterating firm said they had to have a piece of comb in each tumbler, as that is the only way people would buy honey (?) put up in glasses nowadays. And that shows there is a great lack of education or information on the part of the consumers these days concerning pure honey.

So long as the glucose business holds out, it matters not how limited is the genuine honey product on the market, under existing circumstances.

Now, fellow bee-keepers, what can we do to stop this gigantic evil which threatens to destroy the legitimate and honorable industry of honey-production? Why, *unite*, and *push* for the enactment of a *prohibitory law* that will compel the entire cessation of honey and other adulteration, or the requirement that every package of food products offered for sale shall bear upon it, in conspicuous letters, the true name or names of the contents. Then if the consumer desires to purchase glucosed honey, let him do so, and not be deceived into buying the adulterated article when he thinks he is getting the simon-pure honey.

But some will say, "You *can't* enforce such a law!" I say *we can.* How? Elect *men* to office, and *not politicians;* men who are *honest*, who are *not afraid* to do their *duty* Then when our officers attempt to put down our common enemy—the honey adulterators—let us give them all the help within our power, instead of standing around and whining, "You *can't* enforce it!"

Until bee-keepers have in their hands this legal weapon with which to pulverize the monster of honey adulteration, I can see in the future no encouragement for our beloved pursuit. But equipped with an adequate *anti adulteration law*, bee-keeping would go marching onward with the full assurance that its devotees have an even chance to become thrifty and prosperous in a pursuit that endeavors to place upon the table in every home, one of Heaven's purest and best sweets—honey, as gathered by the blessed bee. GEO. W. YORK.

Chicago, Ill., Oct. 1, 1896.

JUST as we go to press the *American Bee Journal* has come to hand with the information that George T. Wheadon has been arrested on a warrant charging him with obtaining money on false pretenses. It seems he sold 840 tubs of butter, and several dozen cases of eggs for a Wisconsin farmer, and failed to turn over the proceeds. I also learn through the same periodical that another commission house is still sending out circulars on *white* paper after the Wheadon stripe, and claiming to be one of the largest dealers in the country.

OUR HOMES.

For precept must be upon precept, precept upon precept; line upon line, line upon line; here a little and there a little.—ISA. 28:10.

The following is along the line of thought of my talk to the bee-keepers at Lincoln, Neb.:

Dear friends, this is an age of improvement and progress. We are not only devising ways and means of furnishing *better* things than the world ever saw before, but, strange as it may seem, we also furnish these improved necessaries of life for *less money* than they could ever be bought for before. Yes, many times we furnish a better article at a much less price than the old-fashioned awkward utensil or implement used to cost us fifty or a hundred years ago. I may mention briefly some of the things that have been accomplished in bee culture. We not only have a better and handsomer section to hold the honey than we ever had before, but our expert bee-keepers succeed in getting it filled with snow-white comb and luscious contents in a neater and more attractive shape than it has ever been before.

I can remember the time, years ago, when I decided that the comb foundation that seemed to be needed ought to be made with a pair of rolls. I said we should be able to roll out a strip a mile long if anybody wanted it. Long days and nights I worked on the problem; and I distinctly remember the time when Mrs. Root urged me to burn up my machinery and give it all up. She was tired of the melted wax, doubtless, and I was too. But I could not think of abandoning the project then and there. Nowadays when I go down into our wax-room and see the boys and girls making beautiful foundation, or, rather, see as I have of late where automatic machinery does it, I wonder if anybody thinks of the long string of difficulties that we had to get through with before this thing was a success. The machine now takes a chunk of pure beeswax, said wax being melted and kept at the right heat by a coil of steam-pipe. A machine makes it into sheet wax of evenest thickness, and these sheets are run out and rolled up like a belt of leather or like paper from a paper-machine. Another automatic machine passes it through the rolls, cuts the sheets into the desired length, and piles them up neater than any one can possibly do it by hand. These machines will run for a little time alone, and do their work all right without any attention or supervision whatever. I have not the time here to mention the improved products that meet us on every hand; but let me take one more illustration:

During the past summer I have greatly enjoyed raising a crop of the finest apples I ever saw. We commenced in the spring, before the trees were leaved out, and sprayed them with the Bordeaux mixture. Just before the buds opened we gave them another spraying. After the petals had fallen so that we should not poison the bees they were sprayed a third time, with a little London purple added to the spraying solution. This was to poison the codling-moth. When the apples were as large as hickorynuts they were sprayed again with the Bordeaux mixture and arsenic, and a little later on they were given still another dose. The result was, we had apples free from scab, and almost free from worms. But this *spraying* was not all of it. The borers have for several years been at work down near the base of the trunk of the trees in my young orchard, and some of the trees were killed outright before I found out where and what the enemy was. Last fall we commenced to dig out the borers with a sharp pointed knife and wire. We went over them again in the spring, and once more along in June, and we are going over them again this fall. And that was not all. The trees blossomed very full last spring. Many of them had set more apples than they could hold. We picked off the gnarliest and poorest specimens where there were too many on a limb; and we got rid of some more by shaking them off in order that the remaining ones might have a better chance. Still further, we drew some fine old well-rotted manure, and scattered it liberally around under some of the choicest trees as far as the limbs extend. This was to enable them to perfect the immense loads of fruit that the tree had undertaken to mature. The copious rains of last summer carried this fertility all down to the roots; and as a reward for our pains and care, we had, as I have told you, apples that not only astonished but delighted all our friends. Yes, the apples delighted our little granddaughter before she was quite one year old; and grandpa carried her out and showed her the great nice apples, and explained to her that they were not only handsome, but would be good to eat in a few days. She learned with her baby lips to join in his exclamations of surprise and thankfulness. If I remember correctly he used to say to her, "Oh, my! what nice apples!" But her baby lips did not shape the words exactly as grandpa did. She got it, "Oh, *wy!*" instead of "Oh, my!" Pretty soon that was her favorite expression when she saw any thing nice or unusual. Sunday morning, Oct. 18, when the snowflakes came tumbling down almost as large as half-dollars, she looked out the window and expressed her wonder and surprise by a series of "Oh, wy's!" When she came to enjoy the nice mellow apples with grandpa, there were more "Oh, wy's!"

You see, we could not secure any thing real nice and beautiful without much care and pains; but it must be line upon line and precept upon precept, as the old text has it. And, again, it is not enough to plant the seed or to plant the tree. Both must be watched year by year, week by week, day by day. Sometimes it must be hour by hour. If you are raising Hubbard squashes, and want to have the finest and best in the market, the bugs must be watched for when the weather is favorable, almost every hour. It will not do to say, "I *think* they are all right, for there was not a bug on them this morning." By noon the bugs may have destroyed a large number of plants. Sometimes the potato-beetles come in upon us in the same way. Eternal vigilance is the price of victory, and it is so in producing almost *any* thing for market, in these days when sharp competition is all around us. It will never do for us to be discouraged because there are so many foes to fight, and because prices are so low, unless we have the very finest that can be produced. It seems hard; but yet if we have the right attitude toward the great Creator of the universe, and are looking to him daily and hourly for guidance and counsel, we shall see there are blessings in the background of the very things that look to us like misfortunes and hardships.

And now, dear friends, I want to speak of something of more moment and more importance than sections of nice honey or even beautiful apples. All these things are right and proper. It is a grand thing to see young men or young women giving their whole heart to the work of excelling in these things. But this should not be first and foremost. Somebody has said that the most *important* crop that grows on the farm or anywhere *else*, for that

matter, is the crop of boys and girls. And now I am going to direct your attention to caring for the children in this great land of ours. Educated, intelligent, pure-minded men and women are the grandest piece of work that humanity ever contemplated; and bright, symmetrical, pure, and good men and women do not come without care and painstaking. If the parents do not do it, somebody else must do it. That little grandchild I have alluded to would not be sweet and pretty if she were allowed to have her own way. Ask her mother, and she will tell you that I have made no mistake. God gives us these children pure and innocent; but by some means we may not be able to understand exactly, evil impulses and bad dispositions are sure to take root and grow if they are not watched and weeded out. Like the borer in the trunk of the apple-tree, these evils, if allowed to go on, will strike at the very vitals in a short time. Then, again, like the apples, we must watch them during *every stage* of their growth. The parent's work is almost never done.

Here is a sample of the things that threaten our boys. A speaker before the Ohio State Liquor League, after having discussed matters of interest to the saloon business and its successes, wound up with the following significant statement:

It will appear from these facts, gentlemen, that the success of our business is dependent largely upon the creation of appetite for drink. Men who drink liquor, like others, will die; and if there is no new appetite created, our counters will be empty, as will be our coffers. Our children will go hungry, or we must change our business to that of some other more remunerative.

The open field for the creation of this appetite is among the boys. After men have grown and their habits are formed, they rarely ever change in this regard. It will be needful, therefore, that missionary work be done among the boys; and I make the suggestion, gentlemen, that nickels expended in treats to the boys now will return in dollars to your tills after the appetite has been formed. Above all things, create appetite!

One of their plans to teach the boys to like strong drink was to offer them lemonade containing just enough whisky or brandy to give the boys a taste. When somebody told me the borers were killing my nice young apple-trees, I declared that that sort of work should be stopped. But just compare for an instant this matter of choice apple-trees with the *boys* of our homes. Do you not say with me, "Let the apple-trees go—let *every* thing go—until we hold these fellows up to the scorn of all good people"?

Now, it is not intemperance alone that our children are to be guarded against. There are other things that have been pronounced even more blighting and withering and devastating than a taste for liquor. But the saloon men have got hold of *this* thing too; and the vile pictures of obscenity that accompany the liquor-traffic give you ample proof.

One of the great safeguards to all these dangers that beset our children are good schools and colleges. The beautiful university, with its hundreds of pupils, at Lincoln, Neb., tells us of the work that is being done there; and the bright faces, the good behavior, and the intelligent-looking young men and women that we see all through the buildings tell again of the work that is being done in the way of fashioning and molding intelligent beings into *God's own image*, instead of letting them go down to the depths of destruction and toward the bottomless pit that some of us have occasionally had at least glimpses of. May God help us to remember the boys and girls, the children of our homes, as well as the other things that cheer and delight us along the pathway of life.

DISSENSION AND CONTENTION AMONG OUR OWN PEOPLE.

The following, which I clip from the Chicago *Advance*, so completely expresses my feelings that I take pleasure in giving it to our readers:

In the interest of good morals and wise patriotism we wish to express our surprise, regret, and utter disapprobation in view of the persistent attempts of some of our political leaders to create social divisions among the American people, and to array classes against classes. *Our commercial and social evils can never be corrected in that way.* The most mischievous man conceivable in church, state, or general society, is the one who creates divisions, antagonisms, and acrimonies among people who are called to live together in harmonious co-operations, or who widens the breaches that fanaticisms have already made. Of all countries, this is out of place in the United States of America. The caste spirit and class prejudices are out of harmony with our national ideas and temper. Before the law, whether written on statutes, or on our traditions and general habits, we are equal. All places, social, political, and commercial, are open to the aspiration and effort of all citizens. Nothing could be more short-sighted and mischievous than that kind of talk which antagonizes political opponents as enemies, or attempts to gain popular support by encouraging one set of citizens in their prejudices against one another, and by fostering the unnatural sentiment that they are the slaves of fancied oppressors rather than American freemen in the possession of all the rights so splendidly conserved under the charter of our liberties. We may differ in respect to policies, but we are all members of one another in the fellowship of freedom.

LINCOLN, NEB.

This whole trip, of something over a thousand miles, was made in about 30 hours, or an average of about 33 miles an hour including stops and change of cars. Some of the way, I noticed by watching the mile-posts, we made nearly if not quite a mile a minute. On these fast trains a dining-car is used to save the time that would be consumed for stopping for meals; but on this side of Chicago the price was $1.00 a meal. I have paid this price for a meal of victuals only a few times in my life, and it has always given me a guilty feeling when I remembered the number of men with large families, who work hard for only a dollar a day; and then to think of taking a dollar for the purchase of a single meal gives me a feeling that I should not like to have it known. I can not do it with a clear conscience. Again, when near Lincoln a man boarded the train, who was a subscriber to GLEANINGS. We had a very pleasant talk with him, and in this talk he said that corn had been sold as low as 10 cents a bushel; and the bushel they have out there—at least a bushel of ears—would mean a bushel basket full, and *half full again*. In other words, think of paying out for your dinner money enough to buy *15 bushels of corn* as we measure it here in Ohio. There is something wrong and inconsistent about this. I do not wonder that the railroad companies complain of the lack of travel. How can a *farmer* travel when he must pay a dollar for his dinner or go without it? Well, I am glad to say that we found a change in this matter when we got on to the Chicago, Burlington & Quincy beyond Chicago. It was my pleasure to have Dr. Miller with me for a traveling companion. Along between 7 and 8 o'clock the doctor mentioned that he would be very glad to have some nice

beefsteak for breakfast if we could get it without paying a dollar apiece; and when the porter announced that breakfast was ready I asked him what they charged. I really felt happy when he said they charged for what a man called for, and nothing more. You see, this hit the doctor and me to a dot, for we wanted just beefsteak and hot water—at least I did, and we did not want to pay for a lot of things we "*didn't* want!" In a twinkling we were seated at a very pretty dining-table. At an expense of only 40 cents each we had just as nice and as large a tenderloin steak as either could have asked for. By consulting the bill of fare I found that one could make a very decent meal at an expenditure of only 25 cents, and enjoy the luxuries of a beautiful dining-room car at the same time. I do not know whether this European plan is a special feature of the C., B. & Q. or not; but I hope that other railroads that do not fall into line of letting a man dine cheap if he wants to will have their reward—a beautiful dining-car without any patrons.

Now, it is worth something to me to eat my breakfast leisurely and in comfort while I am wheeled along at the rate of almost a mile a minute. It is worth something to me to have a great large plate-glass window, spotlessly clean, where I can see our broad country as I leisurely masticate my steak. Through Indiana, Illinois, Iowa, and Nebraska, we saw more corn-fields than almost any thing else; and the fields are so large that the rows are long enough to please even *Terry* in the way of *long* rows. May be I am a little conceited in regard to my own State; but it did seem to me as though the farming through the West was not as well managed as it is in Ohio—at least along the lake shore between Elyria and Toledo. This fact impressed me forcibly both in going out and coming home. For instance, I saw not only men but women digging potatoes with a *hoe* all through the Western States. To make the matter more aggravating, there were so many weeds in the potato-fields it was a very hard matter to get out the potatoes with a hoe or any other implement. Why! I saw *women* chopping away with a hoe when I fairly ached to take one of our nice bright potato-forks and go into that field and get all the potatoes out on top of the ground from a *dozen hills* while they were working at one. I think we should have some missionaries sent out, equipped with nice bright potato-forks. These missionaries should instruct the people how to use a fork in place of a hoe.

Then, again, it is not only the potato-fields that were weedy, but the cornfields were, as a rule, terribly weedy. You may say we can not expect clean corn-fields when corn brings only 10 or 15 cts. a bushel. May be I am wrong, but I do not agree with this sort of reasoning. If I were *obliged* to raise corn at 10 cts. a bushel I think my chances would be better for getting out whole with clean culture; and clean culture does not cost very much nowadays. Perhaps they do not cultivate their corn out west at all. Some of the fields looked as if they didn't. But then there are other fields, and we found them occasionally all along the way, that showed evidences of clean culture and *nice* farming. I do not know how many bushels of corn these people get to the acre; but on my own ground I have succeeded in getting at the rate of 200 bushels of ears to the acre.

A good deal of plowing that I saw done did not suit me. Now, I am not very much of a farmer, and may be these people know their own business best; but after I had *raised* a crop of weeds I should certainly want a plow, and a man to manage it, so as to get *all* of the weeds under the ground and out of sight. Let me digress a little:

A neighbor wanted to hire our team and tools to get in a piece of wheat. Our price for man, team, and tools, is 35 cts. an hour. He thought he could not afford to pay that, so he got a cheaper man to do the plowing. *Then* he decided he had better have our man to finish the job; and as he went away he remarked that the harrowing would have to be done *all in one direction*, because the plowing had been done so poorly the trash would all be pulled up again if it were dragged in the usual way. Our team finished the job and put in the grain; but it cost more to do it than if we had taken the job in the first place (plowing and all) at our price, and we should have had the job from beginning to end in very much better shape. Now, I leave it to you whether cheap hurried plowing pays after all.

The great prairies of the Western States offer wonderful advantages to improved farming, and I was told again and again that no manure was needed, nor fertilizer of any sort. They grow corn on the same ground year after year, and get big crops—sometimes big crops of weeds too, along with a big crop of corn.

As we got near the end of our trip, the prairies began to grow wider and wider; and sometimes the scenery reminded me so strongly of that wonderful trip across the deserts on the Southern Pacific that I felt as if I *must* go on, not only to the great deserts but to the land beyond those wonderful mountains.

Lincoln, Neb., is beautifully situated. Its buildings are as fine as any I ever saw in any city of its size—perhaps finer. A mile or two out of the city there is a wonderful salt lake that I longed to investigate. This salt lake rises and falls like the waters of the ocean, so I am told. At a certain time of the day there is quite an expanse of water; but a few hours later the salt basin is almost empty. I wanted to know more about it, but lack of time did not permit further investigation.

During the intermission, I heard some talk about the beet-sugar industry. The general impression seemed to be that there was not very much encouragement in it for the farmers. One lady, however, thought differently. A great amount of money has been expended in developing beet sugar, and I hope the result may be that it has not been expended in vain.

ON THE WHEEL AMONG THE POTATO-GROWERS.

Yesterday, Oct. 22, it was my pleasure to see Wilbur Fenn, of Tallmadge, O., dig and store his potatoes. You will remember that he is the man who plants his potatoes late—in fact, as late as the last of June and from that into the first of July; therefore he is always late about digging. I reached his place about 9 o'clock in the morning. There had been a severe frost the night before, and the crust on the surface was hardly thawed out enough to start. I found him, however, with four horses on the digger, just ready to go ahead. T. B. Terry places one team ahead of the other; but Mr. Fenn has four horses abreast, each horse walking in the furrow between the rows of potatoes. In this way his horses are all close to the driver, and there is but little trouble in keeping them in place. The digger is the Hoover, illustrated

in our potato-book. He has, while digging, five hired men besides himself and boy, and three span of horses. While waiting to warm up, his hired help was husking corn and drawing it to the crib. As soon as the digger had gone once down and back, two men commenced picking up. Let me say here that his 18 acre potato-field is 100 rods long. This saves a large amount of turning the teams in every stage of cultivating the crop; and with *four horses abreast* it is important that turning be avoided as much as possible. Here is where the importance of long rows comes in. Now for the pickers.

Two men take a potato-box between them. As the machine digs every other row, the potato-box is placed on the row that has been dug and picked up. The pickers are stout young or middle-aged men. With a sort of swinging stride they gather the potatoes and throw them into the box; and as the box is to be moved along, each one keeps watch and is ready, so that they take hold of it, one on each side, without any waiting or hitch in the proceedings. Of course, the empty boxes are placed along so as to be right at hand as fast as they get one filled. It takes a little practice to drop them just about right. When there are boxes enough filled to make a load, a wagon with a long reach, and some stout planks laid on for a bed, is driven to the further end of the field—that is, the further end from the place where they are stored. The lines are tied up, and the horses are trained to run the wagon very near the filled boxes, and yet not so near as to knock them over. One man stands on the plank bottom and takes the potatoes as the other hands them, with a sort of swing, up on to the planks. The team does not stop at all, and, in fact, they are trained to step along at a pretty brisk pace. But it is hustling work, and it makes the men puff. About 30 bushels make a load on this soft mellow soil. The horses go straight up to the cellarway.

Now, if you will give me your full attention I think I can make it plain as to how he unloads, without any picture or diagram. His cellar is reached by going down an ordinary hatchway, say five or six steps. We will suppose the team with its load of potatoes to be standing close by this hatchway. Across the doorway, down to the bottom of the steps, a stout strip of board is nailed. This strip is up perhaps three feet from the ground. Now, a sort of railway-track runs from this strip across the doorway up to the wagon. This railway is made of two strips of hard maple, perhaps 2x6. They are placed about 14 inches apart, and nailed together so as to form a sort of ladder. The upper end rests upon a pair of legs placed wider apart at the bottom, so as to make the tops stand solid. The incline is such that a box of potatoes will just slide down at a pretty good speed. To prevent accidents, a little carriage is made on the railway. This carriage is a frame of boards a little larger than the potato-box. A rope is attached to one side so it can be hauled back to the top after it has carried down a box of potatoes. After the box reaches the bottom, the man in the cellar takes it up. The one on the top gives the rope a jerk, and the carriage comes back for another load. To make this carriage stand still while you are loading, the upper edge drops into a little jog in the track. When the box is placed on the carriage, the back end is lifted enough to start it down the track. While I was present they unloaded 30 bushel boxes in 5½ minutes. This included running the empty boxes up, and loading them on the wagon. The next load, while I stood present with watch in hand, was emptied, 26 bushels, in 3½ minutes. And then the team was back to the field for another load. Now these men did not talk *politics* while making this record, I assure you. They get a dollar a day and their dinner. While I was around, each man worked as if he were running the potato business himself, and was afraid that, at 25 cts. a bushel, there might not be very much profit left for the farmer. The day before, they dug and put into the cellar nearly 500 bushels. The expense of the men and teams would not go over $10 00, so that friend Fenn gets his potatoes dug and put away for winter at an expense not exceeding 2 cents per bushel. As all his other operations in producing the crop are conducted in this same systematic way I should not wonder if he does very well, even should he not get more than 25 cents a bushel. As his crop, however, is all of it extra nice Monroe Seedlings and Sir Williams, he will probably get rather more than what they are paying in the general market. That 18-acre field, if I am correct, is going to give him about 3000 bushels. Potato-growing time with him is harvest time. His oldest boy staved out of school to do errands and help his father boss things, so as not to have any hitch in the work; and his oldest girl, Ellen (who wrote the little letter for us), stayed at home to help her mother get dinner for the "harvest hands."

In discussing the relative merits of the Monroe Seedlings and the Sir William, we begged his good wife to cook some of each kind for dinner. As they were placed on the table, a huge dish of each, smoking hot, cousin Fenn asked us to tell which was the Sir William and which was the Monroe Seedling. The Sir William was a little the most floury and mealy; in fact, they will boil all to pieces if you do not look out, and they are an excellent eating potato, even when half grown, as I have told you before. In point of flavor it is hard to distinguish much difference. The Monroe Seedling, however, is the whiter potato of the two. The Sir William has a little of the yellow tinge. They look a little yellow as they are dug in the field, and have a very light shade of yellow after being cooked; but they are both splendid potatoes.

Now, here comes in another matter that should not be lost sight of. The Sir William is not as good a potato in the spring as the Monroe Seedling. It will sprout almost in spite of you, while the Monroe Seedling can be kept clear up into June, with proper care, almost as sound as when it was first dug. Mrs. Root has said many times that she would rather have the Monroe Seedling in June and July, for a cooking potato, than to have the new potatoes in the market.

In regard to yield, there did not seem to be very much difference. Fenn's potatoes are all grown in a beautiful sandy and gravelly loam. They are handsomer and smoother than potatoes grown on heavy clay or on muck lands, and are much better for table use than those grown in muck.

A little further on, at Mr. Metlin's, I found them digging with a Hallock improved digger. This machine is much like our own, except that it has a sort of grating of steel rods that drags along on the ground right beside the shovel-plow digger. This shovel-plow turns a furrow (potatoes, dirt, and all) over each way on to the frame of steel rods. As it drags along over the dirt the soil sifts down through, while the potatoes, stones, and lumps of dirt are left on the surface. It certainly does very good work for a cheap digger ($18.00); but it does not place every potato on top of the ground quite as well as the Hoover machines do. Another

thing, a great part of the potatoes are left down in the furrow left by the digger. This makes it more work to pick them up than where they are left on top of the ground, or on a strip of ground slightly raised, as with a high-priced digger. It is harder work on the back where you have to reach down *lower* to get the potatoes. Mr. Metlin has Carman No. 1 (or did have until I bought them) and the Koshkonong, the potato that gave such tremendous yields at the Ohio Experiment Station last year. His soil is like friend Fenn's—a sandy loam.

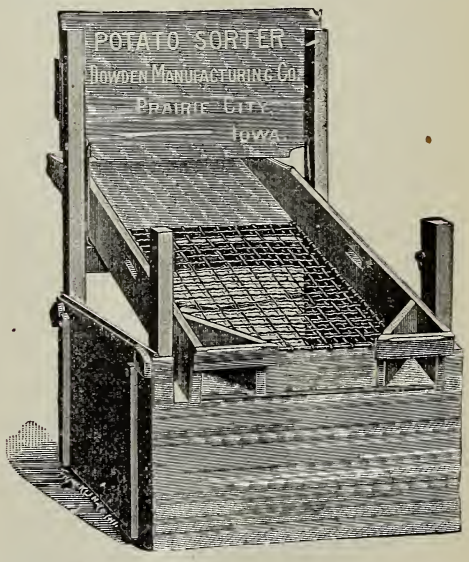
WILL IT PAY TO BUY A POTATO-DIGGER, AND WHAT KIND SHALL ONE BUY?

That depends. If you raise an acre or more of potatoes, I think it will pay you to have a digger. Perhaps one that costs $8.00 or $10 00 like my own, will do. If you are going to raise high priced potatoes, so it is important to get every single one, big or little, it may pay to invest still more money in a digger, say the Hallock; but if you are going to raise five or ten acres every year, and especially if you get 200 or 300 bushels per acre, and of valuable sorts, then you can afford to buy a digger that costs $75 or $100; and, by the way, if the owner of the digger can go out and work with it for his neighbors it will very much aid in reducing the expense of keeping such a machine. I get 25 cents a day for the use of my cheap digger, and sometimes several want it the same day.

On our grounds we commenced digging potatoes about the middle of August, putting in crimson clover after them, and we have been digging potatoes and putting in their place crimson clover, winter oats, and rye, almost ever since when the weather was suitable. Our last potatoes were dug and put away Oct. 20. Now, you see with only ten acres of potatoes of different varieties, and ripening at different times, you can use a digger almost constantly for two months; and if you let it out to your neighbors, it may be made to pay a very good interest on the money invested, even if it is used only in the fall of the year.

SORTING POTATOES.

Wilbur Fenn does the sorting as he picks them up in the field. As a rule he does not pick up any seconds at all. Each man is carefully instructed, and he follows after them to see that they are working according to the instructions. I thought they were leaving some pretty nice potatoes on the ground,* and so I asked him how much he would throw off if they would pick up every thing, little and big. There were two reasons why he did not want to do that way. One was, that he did not want any potatoes to go out as "Wilbur Fenn's" unless they were up to standard according to his ideas. Secondly, he had got his gang of men trained to do the sorting just about to his notion, and he did not want to demoralize them by starting in any other way. So I decided to let them go on, but made arrangements to have a man go along afterward and pick up some Sir William seconds specially for me; therefore Wilbur Fenn's potatoes are all firsts. He has nothing else in his cellar. In our work at home we pick up every thing, especially with the Thoroughbreds and other high-priced potatoes. We stack them up in slatted bushel boxes in the cellar; and when it is stormy and bad weather, so the boys can not work outdoors, they do the sorting with the machine shown below.



You will notice it has a tray with a screen bottom. This tray is arranged to swing. A chain is attached to the back of the tray so that it can swing only so far. Now, one great trouble with most sorting-machines is that potatoes will come part way through the screen and stick. By giving this tray a smart bump or jerk, rather (for the chain jerks it when it gets the length of the chain), the potatoes will, most of them, get jerked out of the screen—that is, they will either go through or else hop out and go down among the bests. The space underneath the tray is just big enough to hold four of our bushel boxes. To work rapidly it needs a man and two boys—one boy for each side of the machine—that is, where your potatoes are to be sorted as we sort them for seed, not only for size, but so that we can throw out all the bad shaped ones and all scabby or cut or bruised ones. All these we put in as seconds. While a cut or bruised potato may keep over winter all right, it does not suit very well to put such into barrels labeled No. 1. This machine, as you will notice, gives the operator or the boys a chance to see the whole of every potato as it rolls down the incline. If we sort them only for size, we can put them through rapidly; but it takes quite a little time to sort them over, especially in regard to general appearance. The price of the machine is $15.00. You see where it is made, by the lettering on the cut. There are three different sizes of screens for each sorter, and the machine is so

*Wilbur Fenn's Monroe Seedlings are remarkable for being of such a nice oval oblong shape—scarcely a prongy or crooked potato. This year, however, the abundant rains had the effect of making more prongy ones than usual. These, unless very large, he throws out with the seconds. His reason for so doing was that he believes like produces like; and although these prongy ones might do very well for table use, he says he thinks it pays him to throw them out as seconds. For instance, should he draw a load of potatoes to market, half a dozen prongy and crooked ones scattered through the lot would knock off three or four cents a bushel. Here is an important item for you, brother potato-growers: When you are going to market with a load of potatoes, all of nice shape, it has quite an influence on the one who is naming the price he will give. Use up the prongy or crooked ones on your own table—that is, if you think it will pay to bother the good wife in that way, or else sell them at half price as seconds. I am not at all sure that planting prongy ones would be more likely to *produce* a prongy crop. Will not our experiment stations please make some experiments so as to decide in regard to this matter a little better?

made that the screens can be changed in an instant. The manufacturers claim the capacity is over 1000 bushels in a day. The weight of the machine is about 100 pounds.

MAULE'S THOROUGHBRED POTATOES CONTRASTED WITH THE EARLY OHIO.

I have before this mentioned the nice Thoroughbred potatoes grown for us by W. J. Manley, Sanilac Center, Mich. Well, among the lot of Thoroughbreds was a barrel of Early Ohios as sample. They look so much like the Thoroughbreds, and were so much larger than the Early Ohios we have around here, we wrote for an explanation. He replied as follows:

Friend Root:—The barrel marked "E. O." was the Ohios all right. I knew you would not be able to distinguish them by appearance; but had you been present when I dug them you would have had no trouble, as the decidedly "red noses" in many of the Thoroughbreds were sufficient to identify them. However, they resemble each other very much; and were it not for the much greater yield according to seed used of the Thoroughbreds I would find it a hard matter to decide which potato was the better.

In point of earliness, there was very little difference between them. The Thoroughbreds were planted but one day ahead of the Ohios, and they were both ready to dig at the same time. As to the oblong shape of the latter, I can only attribute it to the fertility of the soil. I bought the seed for pure, and I believe it is. The soil certainly is very rich as you may know when I say that from 1½ acres I dug 711 bushels of such potatoes as I am sending you, and not a particle of fertilizer of any sort was used. But, hold on! I did use my brains, as Mr. Terry says, in the cultivation of them throughout. My success with the Thoroughbred has "leaked out" in spite of myself, and created, not only a little sensation, but quite a local demand for them.

Sanilac Center, Mich., Oct. 16. W. J. MANLEY.

Seven hundred and eleven bushels of Thoroughbreds on an acre and a half would be 474 bushels to the acre. I am sorry our friend did not also give us the yield per acre of the Early Ohios. I wish he would tell us further if the ground on which these were grown had not been heavily manured the year before. Such a yield without "a particle of fertilizer of any sort" is indeed wonderful. Terry will indeed have to look out for his laurels; but from what I know of him I am sure he will not feel bad to see some of the boy farmers beat their teacher. There must be some wonderful potato land up in Michigan, and I am planning to take a look at friend Manley's potatoes if he continues to grown them another year.

I am very much gratified to learn that with you the Thoroughbred is as early as the Early Ohio. With us it is not quite as Early as the White Bliss; but the Early Ohios did so poorly with us on our soil, that we did not grow any the past year. In other places, however, I am told that the Early Ohio is a good yielder. It is strange what a difference there is in soil and locality on account of a distance of only a few miles.

ALL ABOUT SWEET CLOVER.

For two years past I have gathered and sent to you the seed of sweet clover, without knowing whether it was of any value to farmers, having taken it mostly from the gravel-pits where the soil was removed to a depth of several feet. But noticing some peculiarities about the plant, I have become interested in it. I particularly want to know when and how it should be sown, and how much per acre. How should the crop be managed? I have seen it growing on very poor and hard clay land, and where the soil had been removed—places where red clover would not grow—and the question arises with me now, "Would not sweet clover be the proper crop on such lands for fodder, and to restore fertility?" I also noticed that in places where I cut a heavy crop last year it was very small this year; and where I got none last year I cut a heavy crop this year. Why was this? Will it succeed if sown in fall or spring with wheat, like red clover, or should it be sown separate? HENRY PECK.

East Bethany, N. Y., Sept. 29.

Sweet clover can be sown at almost any season of the year, even late in the fall. We are sure this late sowing is all right; for where the railroad runs through our grounds the clover comes up every spring from self-sown seed dropped from plants where it grew. It is peculiar, and unlike any other plant in its wonderful habit of growing rank and strong on hard subsoil, barren hillsides, such as railroad embankments, gravel-pits along the highways, etc. In regard to its value for reclaiming barren soils, the Ohio Experiment Station made a test by plowing under a heavy growth of it before putting in wheat. Where no sweet clover was turned under, the yield was about 18 bushels per acre; but on the ground fertilized by turning under the sweet clover, the yield was over 26 bushels per acre, and a corresponding increase in the amount of straw. One reason why it prepares the land for other crops is because the great roots going down to such a depth act somewhat as underdrains. Its value for cattle, horses, and other stock, has now been fully settled; but it must be cut or pastured when the plants are small, say a foot or two high. Of course, stock will eat it after they have become accustomed to it, when it is several feet high and in bloom. But its great value is to cut it before the blossom-buds show. The reason it is found in certain places one year and not the next is that it takes two years to perfect blossoms and seed. The old stalks will die, root and branch, after having produced seed. This seed, dropped on the ground, produces small plants that must grow one year before they in turn produce seed and blossoms.

Some years ago D. A. Jones, of Canada, suggested sowing it in strips ten or fifteen feet wide, seeding alternate strips alternate years. In this way the tall plants will reach over the vacant strip and almost meet together overhead. Then after they die down, the young plants in the other strips will in like manner reach over, getting honey on the same ground every year. Its value for stock is easily shown by the fact that it is never found where horses or cattle are pastured. It makes its prodigious growth only along railroad grounds and highways where stock is never turned out. I believe it does not succeed very well sown on wheat in the spring. In fact, I have never seen a real success with it on rich cultivated ground. If others have, I wish they would report.

MORE ABOUT THE BUSH CRANBERRY.

Dear Friend Root:—I notice in GLEANINGS what you say regarding the tree cranberry. I suppose this to be the same shrub which we have in this State, usually called high bush cranberry. It is native in Iowa. It grows six to eight feet high, and bears clusters of *red* berries which are very *sour*. I presume these two traits have given it the common name. One of my brothers has had them growing in his yard for fifteen years or more. They are cultivated mostly for ornament, having a beautiful, white, umbelliferous flower, and, later, clusters of red berries resembling somewhat the European mountain ash. The only culinary use made of them, so far as I know, is for jelly. It is a beautiful color, good body, and has a peculiar "musky" flavor not found in any other fruit with which I am acquainted. And it is not bad to take either. I would not recommend the cranberry-tree for fruit alone, but as an ornamental shrub it is worthy of cultivation. The jelly made from it may not be relished by every one, but we enjoy a glass of it occasionally. The bush resembles the snowball, to which family it belongs, I believe, and the blossom is like the common black haw. EUGENE SECOR.

Forest City, Ia., Oct. 19.

Friend S., I am very glad indeed to have even a suggestion in regard to the value of these

berries as a fruit; but those growing on our ground have such an awfully acrid, bitter taste that it does not seem to me as if they could be fit for jelly. It may be that our peculiar season has caused them to ripen earlier, for they were all matured and gone before we could test them under the influence of frost, as suggested by friend Green on page 764.

SWEET POTATOES IN THE NORTH—HOW TO RAISE "GOOD ONES."

Friend Root:—I have raised sweet potatoes for the past 38 years. I was told to plant on the very best land I had, which I did for a few years. The result was plenty of vines but no potatoes. True, we had an abundance of roots. I once had one 3 feet long and not more than 1½ inches in diameter in the largest place—stringy and not fit to eat. When I can succeed in getting potatoes just the size and shape I desire, I want them, when split through the center, to represent a paw-paw leaf in size and shape. I do not care to have them any larger. The poorer the land the better will be the quality of the potatoes. I think the best potatoes I ever raised were on a bank of pure clean sand where not a weed or spear of grass could grow. The vines will then not grow more than 3 to 6 feet long, and never root to the ground. It adds very much to the size of the crop if one puts a quart of well-rotted manure in each hill when the plants are set. W. C. GAULT.
Ruggles, O., Oct. 8.

PRIZETAKER ONION-SETS VERSUS ONION-PLANTS, ETC.

Friend Root:—I bought Prizetaker and Pearl onion-sets of you last spring. The Prizetaker sets were a success and did better than those I raised by the new onion culture, making larger onions; but the Pearls beat them all. I have been getting 3 cts. per lb. for nice pearl onions, and have about sold out.

Of the 11 Manum's potatoes, 2 were rotten [from freezing.—A. I. R.] and rotten spots on some of the others. I planted one eye in hills one foot apart, and got 450 nice potatoes. I think they are a great potato. J. E. JOHNSON.
Bishophill, Ill., Sept. 26.

REPORT ON SECOND-CROP THOROUGHBRED POTATOES.

I got one pound of Maule's Thoroughbred potatoes (second crop) from you July 24; planted 50 sets; 12 were up Aug. 15; 30 more came up afterward, too late to amount to much; dug Oct. 15, 26 lbs., some of them fine ones. LEVI HERR.
Wilton Junction, Ia., Oct. 24.

Health Notes.

We copy the following from a little pamphlet from the Sanitas Food Co. Where we put in stars we have omitted some of their objections to lean meats, for our experience does not quite agree with it:

A NEW FOOD.

The excessive indulgence in sugar, candy, and other sweets, and the general use of imperfectly cooked grains in the form of oatmeal, cracked wheat, and the great variety of other breakfast foods with which the market is flooded, have given rise to a new form of ailment which is almost universal among Americans, although but recently recognized. This disease is known as "amylaceous dyspepsia," or indigestion of starch, and is sometimes called "vegetable dyspepsia." It manifests itself by pain and sourness in the stomach, formation of gas in the stomach and bowels, bloating, colic, heaviness after eating, headache, emaciation, etc. * * * * * * *

Quite a large proportion of persons suffering from this form of dyspepsia find so much relief from their distressing symptoms by the use of a flesh diet that they are naturally led to the conclusion that a vegetable diet does not agree with them, and so subsist almost wholly on meats. * * *

The effort to meet the requirements of this class of patients has led the writer to undertake an extended series of experiments, as a result of which he has succeeded in producing a most delicious and wholesome food from nuts, to which has been given the name of "nuttose." It is so perfect a substitute for flesh flood, that in eating it one could readily imagine himself to be partaking of roast beef, dried beef, broiled chicken, or other meats, according to the mode of preparing.

Nuttose not only satisfies the craving for meat, but supplies the same kind of nutriment, and in a form which is digestible, and wholly free from the unwholesome properties of flesh food.

Price 40 cents per 1-lb. can.
SANITAS FOOD CO., Battle Creek, Mich.

We have had a sample of the nuttose; and it is not only a most delicious and nourishing food, but one would be almost certain it was a preparation of meat were he not told otherwise. Great credit is due to the Sanitas Food Co. for having given us a preparation of nuts, so nearly resembling meat. I presume our readers are well aware that I have long felt that I should be very glad of something in the line of nourishing food for invalids that would not necessitate the taking of animal life; and our friends in Battle Creek have, I believe, come pretty near it. The only thing to be done now is to make the price so that it will not be more expensive than flesh food.

Since the above was written they have also sent me a sample of nut cheese. This is a very fair substitute for real cheese itself; and in one respect it is better, for one can make a whole meal of nut cheese—at least I think so—when he would hardly dare to do it with cheese made from milk. For full particulars in regard to these new food products, address as above.

Special Notices in the Line of Gardening, etc.

By A. I. Root.

LOW PRICES ON SEEDS.

With corn and oats at 18 cts., and many other things about as low, the prices on field seeds and garden seeds too, for that matter, are bound to run low. We are not prepared yet to make figures on all kinds of seeds, but we can usually give a big reduction from last year's prices on almost any thing. As a sample, we give you

PRICES OF JAPANESE BUCKWHEAT, NEW CROP.

Peck, 20 cts.; ½ bushel, 35 cts.; bushel, 65 cts.; 2-bushel bag, $1.10; 10 bushels or more, purchaser paying for bags, 50 cts. per bushel.

BASSWOOD SEEDS FOR FALL PLANTING.

Now is the time to sow them, friends, and we can give you fresh new seeds just gathered from thrifty young basswoods of our own growing. Ounce, 5 cts.; per lb., 50 cts. If wanted by mail, add 10 cts. per lb. for postage and packing. Sow the seeds now in good rich soil about as you would sow peas. If you put them in beds in the garden, you can put the rows as close as a foot apart, and drop the seeds about every inch. If you put them as close as this, however, you will have to transplant the young trees when they are one year old. With good rich soil, such as is used for market-gardening or plant-beds, you can get trees three feet high in a single season, under favorable circumstances.

This is also the proper time of year for planting out either large or small basswood trees. See prices in our regular catalog.

POTATOES FOR PREMIUMS.

We shall continue offering as heretofore 1 lb. of Thoroughbreds to everybody who pays $1.00 for GLEANINGS without asking for any other premium. Remember, 1 lb. of Thoroughbreds for every dollar sent, whether it is paying up old dues or subscribing for the future; and to every present subscriber who sends us $1.00 for a new name—that is, who introduces GLEANINGS for the first time into a family

or new neighborhood, we will allow him ½ peck of Thoroughbreds, (or one peck *seconds*) worth $1.00; but in both cases we pay no postage nor express or freight charges. If you want your premium potatoes sent by mail, send us 9 cts. for postage and packing potatoes.

SEED POTATOES.

We have perhaps the finest lot of Early Ohios that we have ever got hold of or seen before. They are the same mentioned on page 800. The price will be as in the table below:

NAME. Varieties are in order as regards time of maturing; earliest first, next earliest second, and so on.	1 lb. by mail.	3 lbs. by mail.	½ peck.	Peck.	½ bu-shel.	Bushel.	Barrel—11 pk.
White Bliss Triumph	$ 15	$ 35	$ 20	$ 35	$ 60	$ 1 00	$ 2 50
E Thoro'bred, Maule's *	50	75	60	1 00	1 75	3 00	7 00
Early Ohio.....	15	35		25	40	75	2 00
Early Norther	12			20	35	60	1 50
Burpee's Extra Early....	15	35		25	40	75	2 00
Freeman	15	35		25	40	75	2 00
New Queen				20	30	50	1 25
Monroe Seedling.....	12			20	30	50	1 25
Rural New-Yorker No. 2..	12			20	30	50	1 25
Sir William	15	35		25	40	75	2 00
Carman No. 1	12			20	35	60	1 50
Carman No. 3	15	35	20	35	60	1 00	2 50
Koshkonong.....	15	35		25	40	75	2 00
Manum's Enormous.....	15	35	20	35	60	1 00	2 50
New Craig.....	15	35	20	35	60	1 00	2 50

* At present writing, October 30, 1896, we have sold all of our best Early Thoroughbred potatoes, or practically all of them, to Wm. Henry Maule; therefore the potatoes offered in the table at the above price are all seconds. If you want firsts they will have to be taken from the stock now in our possession, belonging to Mr. Maule, at $15.00 per barrel.

We guarantee against damage by frost all potatoes ordered and shipped during this month of November.

OTHER POTATOES AS PREMIUMS.

Quite a few have wanted to know on what terms they could have other potatoes as premiums, and we have decided to allow 25 cents' worth of any kind of potatoes for every dollar sent us for GLEANINGS, present, past, or future. For every dollar sent by an old subscriber for a new name which is secured as explained above, you may have 50 cents' worth of any of the potatoes in the table. We can furnish seconds for half the price mentioned in the table, with the exception of White Bliss, Burpee's, Monroe Seedling, and Rural. All the potatoes sent out this fall of Thoroughbred, Early Ohio, Freeman, Monroe Seedling, Sir William, Carman No. 1, Carman No. 3, and Enormous, are grown for us on sandy potato soils, and are *extra fine* tubers.

KOSHKONONG AND EARLY NORTHER POTATOES.

I ran across some of these on one of my wheel rides, as you will see on page 799, and since then I have secured ten bushels to distribute among our friends who may care to try them. This potato gave the largest yield of any at our Ohio Experiment Station last season, running up to 309 bushels per acre, while the Sir William gave 308.

We have also succeeded in obtaining some very nice Early Norther, grown by a branch of the Ohio Experiment Station. The station gives this potato a very good recommend for an extra early one. It seems to succeed everywhere.

GOOD NEWS FOR ALL THE FRIENDS WHO OBTAINED THOROUGHBRED POTATOES FOR PREMIUMS, OR WHO PURCHASED THEM LAST SEASON.

Just as we go to press to-day, Oct. 30, we have received an offer from Wm. Henry Maule, the originator of the Thoroughbred, for our whole stock, or practically so, of Thoroughbred potatoes. This practically gives him control of the market; and as the potato is of his own originating, it is his privilege to put what price on it he chooses. The price, therefore, from this time on, will be $15.00 per barrel, or $10.00 per barrel for 10-barrel lots. Single-barrel lots may be shipped from here; but larger orders will have to go to Mr. Maule himself; but we shall not sell any firsts for less than the price above—$15.00 per barrel. At present writing we have not received Maule's prices for smaller lots than one barrel; but have quite a quantity of very good seconds that we shall still offer at the price given in the table above. These seconds are not all seconds because they are small in size, but there are some potatoes among them that were cut in digging, some that are prongy or otherwise badly shaped, and some that are scabby. I believe our experiment stations have decided the scabby are just as good as any to plant if they are first treated with corrosive sublimate. This, however, should be done just before planting, if I am correct. Further particulars will be given in our next issue.

Now, friends, this is good news for all who have Thoroughbreds for their own use or to sell, because it indicates that the price is going to be high next year. It will pay to save and plant every potato.

GARDENING FOR NOVEMBER, ETC.

Unless you have glass, there is very little planting to be done; but I think it pays the gardener and everybody else to have the ground cleared off, all rubbish plowed under or buried out of sight. It is poor economy to burn up the trash unless you want to get rid of weeds that have gone to seed. No weed should ever go to seed on your premises. If, however, it is already done, burn them up; and then I would put in rye, even at this late date. It will be worth something to plow under in the spring; and if you have a wet time, the ground, as a rule, will be drier where rye is sown. If you do not care to put in rye, throw it up in ridges so as to let the frost work it up; then the ridges will be just the place for planting out your early peas.

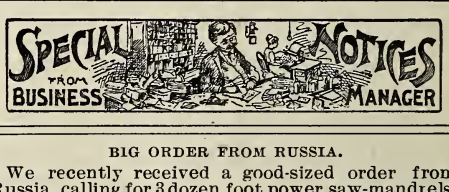
Perhaps you remember what I said about peas sown in March, last spring. If you use glass, some lettuce should be put in every ten days or two weeks, so as to have lettuce plants on hand.

Winter onion-sets can be put out now any time when the ground is not frozen. You can also set out strawberry-plants whenever the ground is not frozen, if you have learned the trick by practical tests.

For myself I have had excellent success in planting apple trees in the fall; and I notice now that very nice trees can be had for 10 cts. apiece, and even less by the quantity. Remember, an apple-tree grows while you are asleep. It costs but little to start it, and it may chance to give more delight to the good wife and children in a few years than any other investment you ever made.

If you have extra sashes, put in spinach. With a protection of glass, without any heat whatever, you can grow beautiful spinach, and it has with us never failed to command as good a price as lettuce, when nicely grown.

Take good care of your seed potatoes, and fix up your cellar—not only frost-proof, but make it neat and tidy. With a little pains a cellar can be made so pleasant and tidy that you will not be backward about taking your friends down to show them your nice apples, potatoes, etc.



BIG ORDER FROM RUSSIA.

We recently received a good-sized order from Russia, calling for 3 dozen foot power saw-mandrels, 8 dozen circular saws, and 15 comb-foundation mills, as well as a number of other items.

BEESWAX HIGHER.

There has been an advance in the general market for beeswax during the past few weeks, and we are now able to offer shippers 24 cents per pound cash, 27 cents in trade for average wax delivered here. We do not look for any further advance for some time, although we can not tell, of course, how the market will go. If you have wax to dispose of you will do well to ship it at above prices. We have bought up several tons recently, and are always ready to add to our store, especially to be paid for in trade.

EARLY-ORDER DISCOUNT.

Now is a good time to lay in such supplies as you know you will be in need of next season. Only a month remains of the time when the largest discount is allowed. Up to Dec. 1st, 5 per cent is allowed on